FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

APRIL, 1951

Fire Involving Dome of San Francisco City Hall Gives Firemen Some Lofty Work. (Article Elsewhere in This Issue)

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A CASE · SHEPPERD · MANN PUBLICATION

For COMMON BREATHING ACCIDENTS and for CIVILIAN DEFENSE

is Your Community protected

by the MOST EFFECTIVE Resuscitation apparatus known to science?

EMERSON RESUSCITATORS

SIMPLE to operate, with no complicated adjustments.

SAFE for adults, children, or infants. There is no record of lung injury from the pressures used in thousands of cases in more than ten years.

EFFECTIVE. The suction phase, alternating with the positive phase, helps circulation and can be of life-and-death importance, especially to victims in shock.

WRITE for our free

Medical Reference on Resuscitation

Information and Demonstration

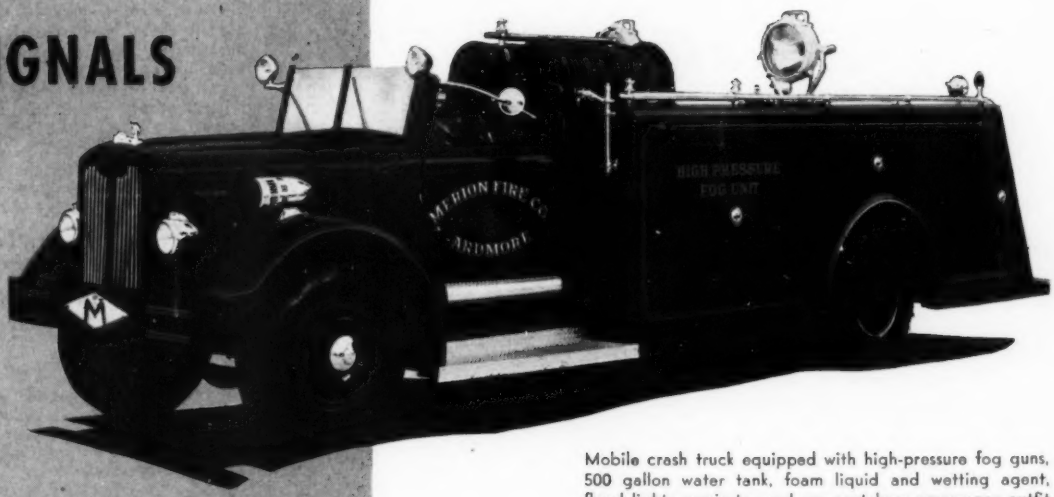
Bulletin on a New Manual Method of Artificial Respiration

J. H. EMERSON CO.

32 COTTAGE PARK AVENUE CAMBRIDGE 40, MASSACHUSETTS

FEDERAL WARNING SIGNALS

"TOMORROW'S APPARATUS TODAY"



Mobile crash truck equipped with high-pressure fog guns, 500 gallon water tank, foam liquid and wetting agent, flood lights respirator and oxy-acetylene emergency outfit mounted on Autocar chassis. By Edgar Road Tank Works. Powerful Federal siren mounted on fender.

ARE *FIRST CHOICE* FOR *ULTRA-MODERN* APPARATUS

This ultra-modern apparatus employs the most modern method of combating fire. Its method of *self-protection* is the siren mounted on the fender. The authoritative roar of a Federal coaster siren pierces high-level traffic noises and provides the instant protection vital to safety. Federal has a national reputation for manufacturing the finest, most modern warning signal equipment you can buy.

FEDERAL BEACON-RAY LIGHT

The entire practice in *visible* signals has recently been revolutionized by the spectacularly simple Beacon Ray light. Its twin beams rotating through 360° are eye-catching, just can't be missed giving full protection, front, sides and rear.

Write today for your copy of the Federal Emergency Signal Bulletin.

FEDERAL ENTERPRISES, INC.

FORMERLY: FEDERAL ELECTRIC COMPANY, INC.

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FIRE ENGINEERING

A Consolidation of FIRE AND WATER ENGINEERING, THE FIRE ENGINEER, FIRE PROTECTION *and* FIRE SERVICE

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FRED SHEPPERD
Editor

ROI B. WOOLLEY
Assistant Editor

THE WORLD SPEEDS ON!

LESS than a year ago, firemen of a big city who were located in the quarters of a company out fighting a multiple alarm church fire, watched the operations of their blue-shirted brothers at that fire on the fire station television set.

● Not many weeks ago millions of television watchers thrilled to the dramatic battle put up by Chicago firemen to control a spectacular warehouse blaze.

● And last month, still more video millions "sat in" on the hearings of the Kefauver Committee, to see and hear perhaps the most dramatic situation ever to involve a municipal fire department.

● If ever facts justified the oft-repeated assertions made by this Journal that in the fire service yesterday's ways and methods won't do for today—and tomorrow, it has been within these past few momentous months.

● But video is only one innovation that is shaping the future in fire protection and fire prevention. There are many other elements that come even closer to the fireman's life and calling—changes and improvements in techniques, in training and in the "tools of his trade!"

● There is one outstanding source through which the fire service can know all about and keep abreast of these almost kaleidoscopic developments! You've guessed it! *You're reading it!*

The Publishers

FIRE ENGINEERING

The Journal of the Fire Profession since 1877; published on the fifteenth of each month by Case-Shepperd-Mann Publishing Corp., 24 West 40th St., New York 18, N. Y., also publishers of *Water Works Engineering, Wastes Engineering*, etc. ¶Subscription price: U. S., Latin America and Canada, $3.00 a year; Foreign, $4.00; Single copies, 35c. ¶Member of Audit Bureau of Circulations and Associated Business Papers, Inc. ¶Entered as second class matter April 15, 1929, at the Post Office at New York, N. Y., under Act of March 5, 1879. ¶Contents of this issue copyrighted, 1951, by Case-Shepperd-Mann Publishing Corp. President and Advertising Director, KARL M. MANN; Vice-President and General Manager, I. HERBERT CASE; Secretary and Editorial Director, FRED SHEPPERD; Assistant Advertising Director, WALTER H. FREDRICKS; Eastern Representatives, WILLIAM J. GIBSON, ALFRED J. HOUGHTON; Circulation Manager, W. H. TOPHAM. CHICAGO OFFICE: W. S. CLEVENGER and L. M. ROCHE, 8 So. Dearborn St., Chicago 3, Ill.; SAN FRANCISCO: CHARLES H. WOOLLEY, 605 Market Street, San Francisco 5, Calif.; LOS ANGELES: AUGUST HAURIN, 6000 Miramonte Blvd., Los Angeles 1, Calif. ¶Printed in U.S.A.

A CASE-SHEPPERD-MANN PUBLICATION
"Specialized Leadership"

The FABRIC HIGH SPEED • THREE LUG • COUPLINGS are very much faster and easier on the men. Regular equipment on all 2½" and 1½" sizes.

The FABRIC HIGH SPEED • THREE LUG • COUPLINGS have other advantages, such as freer rolling, cleaner truck feedout and closer inpacking.

• KEYSTONE •

FULL CABLED, FULL TWILL WOVEN, GENUINE WAX AND PARA GUM TREATED HEAVY DUTY FIRE HOSE

FABRIC FIRE HOSE CO.

1869 SANDY HOOK, CONN. 1951

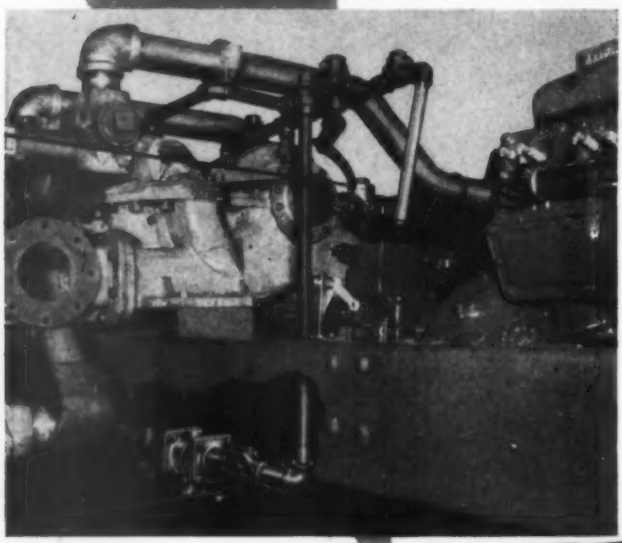
It will help if you mention FIRE ENGINEERING *when writing advertisers*

IN AMERICAN-LAFRANCE FIRE ENGINES

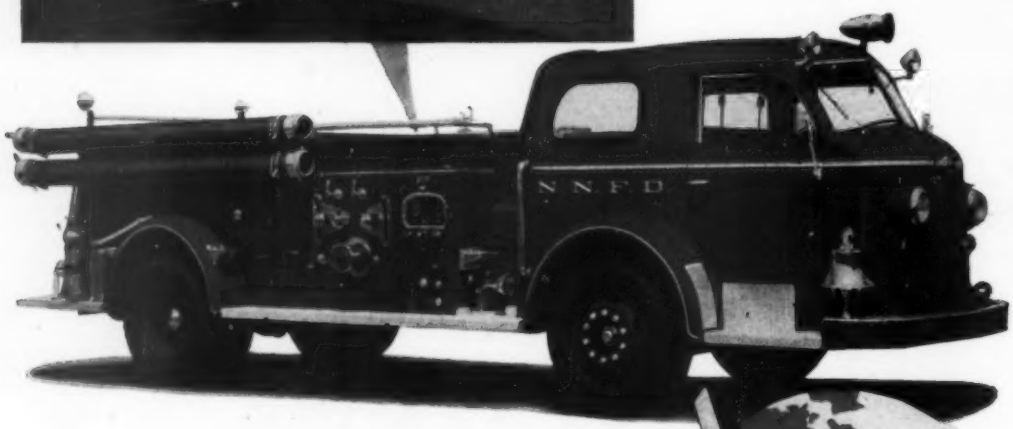
THERE'S *Extra Value* FOR YOU · · ·

A PUMP PRIMING SYSTEM that always works, and does not require continued maintainance!

Another *Exclusive* AMERICAN-LAFRANCE Feature!



Proven in over ten years of fire service use. The American-LaFrance exhaust ejector system always primes, no matter how much, or how little, you use it. Dependability counts at every service call. Simple in operation, no gears to shift, no lubrication, no clutch. Primer operation is independent of main pump. Prime or re-prime with main pump running—no shut downs.



● Seventh in a series of advertisements featuring EXTRA VALUE in American-LaFrance, first choice of the fire service.

AMERICAN-LAFRANCE-FOAMITE CORPORATION
ELMIRA, NEW YORK, U. S. A.
LAFRANCE FIRE ENGINE AND FOAMITE LIMITED
TORONTO 9, ONTARIO, CANADA

New B. F. Goodrich Fire King fire hose 50% stronger, 12% lighter

Stands higher pressures—tested to 600 pounds

FOR years engineers have been searching for a stronger, lighter fire hose cord. A new chemically-produced fiber has now been designed—especially for fire hose. Not affected in any way by moisture, mildew, mild acids or alkalies. Used in new Fire King hose as the cords that go *around* the hose and carry the load under pressure.

Stands higher pressures—In actual laboratory tests, Fire King hose—with the new cord—was found to be 50% stronger than standard hose. Every length of Fire King fire hose is tested to 600 pounds pressure.

Lighter, more flexible—Fire King cord is lighter, more flexible than ordinary fire hose cord, making hose easier to handle and coil in a small diameter. New Fire King hose is 12 to 15% lighter than standard B. F. Goodrich fire hose tested to *400 pounds pressure.*

End protection—Fire King (2½″ size only) has the exclusive patented B. F. Goodrich end protection—an extra ply of hard woven cords extending 12″ from the coupling. Adds 100% more strength to coupling area. Not one single length of B. F. Goodrich fire hose with end protection has ever failed in the coupling area.

Fire King is available with or without Hydroseal treatment. It's a double jacket hose, available in 1½″ and 2½″ sizes.

Fire King combines all the features of the highest grade B. F. Goodrich fire hose with a brand new feature—Fire King reinforcing cord. The result is a premium fire hose 50% stronger, 12 to 15% lighter, yet only slightly higher in cost.

Departments looking for ways to lower hose costs by getting hose that lasts longer should write for the name of nearest BFG Fire Hose Distributor. *The B. F. Goodrich Company, Industrial & General Products Division, Akron, Ohio.*

Fire Hose
BY
B.F.Goodrich

Prepare Now for community defense with

John BEAN HIGH-PRESSURE FOG FIRE FIGHTERS

NOW THAT air attack is more than a possibility, fire protection is a necessity for your community!

That means bringing your department up to full strength by replacing obsolete apparatus with modern, dependable equipment. It also means advising manufacturers on how to protect their industries in case of air attack.

John Bean High-Pressure Fog Fire Fighters are equally effective for local fire departments or manufacturers because of these five important fire-fighting exclusives:

Carry their own water supply! Entirely independent of municipal water system in case of air attack! Go into action faster, too, because no time is wasted laying hose!

Put fires out faster! Bean High-Pressure Fog absorbs heat instantaneously!

Clear way for close-up work! Fog clears way through smoke and flames for a faster, safer entrance!

Minimize water damage! Fog quickly turns into steam, causing little or no water damage!

Require less personnel! Handling of hose lines and clean-up work minimized. Increases effectiveness of any department!

Write today for complete information on how you can give your community effective civil defense with John Bean High-Pressure Fog Fire Fighters.

ONE OF the many John Bean High-Pressure Fog Fire Fighters in use for all-around fire protection as well as civil defense.

BEAN original HIGH-PRESSURE FOG FIRE FIGHTER

CAN BE MOUNTED ON MOST STANDARD TRUCK CHASSIS

FOOD MACHINERY AND CHEMICAL CORPORATION

JOHN BEAN DIVISION, DEPT. 126, LANSING 4, MICH. • JOHN BEAN DIVISION (WESTERN), 409 JULIAN ST., SAN JOSE, CALIF.

BUILDERS OF BEAN HIGH-PRESSURE PUMPS FOR OVER 60 YEARS

MINNEAPOLIS, MINN., SATURDAY, MARCH 10, 1951

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'Interfering,' Says; Cina the Attack

...L WINGARD ...Star Staff Writer

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Baby Clinches a Deal

Photo for the Minneapolis Star by Hans Clay, Jr.

A three-week-old Farmington, Minn., baby owed its life today to a salesman, and the salesman made a deal for which he is in part, at least, indebted to the baby. The salesman, E. A. Ammerman, was busily demonstrating a resuscitator to Farmington firemen when in rushed Mrs. Otto Leidner with a call for help. A block away, Ronald Partlow, infant son of Mr. and Mrs. Robert Partlow, was choking, his bronchial tubes clogged with phlegm. The firemen, including the baby's father, grabbed the resuscitator and rushed to the Partlow home and revived Donald, who had stopped breathing and had turned blue. Today the Farmington fire department owns a resuscitator.

Draft Bill Faces Snag in House

Many Changes Likely in Measure Passed by Senate

WASHINGTON, D. C.—(UP)—The senate bill to draft men 18 through 25 for two years' military duty and set up universal military training ran into trouble in the house today.

House military leaders predicted the house will pass the bill, but that it will be amended to bear little resemblance to the version approved by the senate ...iday.

Allied Wider Bridge

TOKYO, JAPAN — ...troops rammed their bri... ...river 10 miles wide and ne... ...east of Seoul.

Flame-throwing ... units and ...

Reproduction of front page news item courtesy Minneapolis Star

WHAT CONVINCES A COMMUNITY IT SHOULD HAVE AUTOMATIC RESUSCITATORS ALWAYS AVAILABLE?

Farmington was lucky . . . it was convinced by a life saved by the chance presence of an E & J Resuscitator! More often, however, communities are convinced by lives lost because no automatic resuscitation equipment was available when needed.

If your community or your department is not now equipped with modern automatic resuscitation equipment, avoid the chance of your community being convinced by that second method. Be ready for any asphyxiation emergency when it comes by adding the famous E & J Portable Resuscitator-Aspirator-Inhalator to your equipment. Right now . . . before a call for help comes in . . . is a good time to purchase it or interest community leaders in a fund-raising drive. A letter or wire to E & J will bring to you without obligation all descriptive data, a complete demonstration (just like Mr. Ammerman was giving in Farmington) and various plans for raising funds.

The E & J Portable Model illustrated provides hospital-quality resuscitation anywhere, for it has exactly the same precise and reliable mechanism as the E & J Hospital models used regularly in leading hospitals throughout the world.

E & J MANUFACTURING CO.

Glendale 1, California

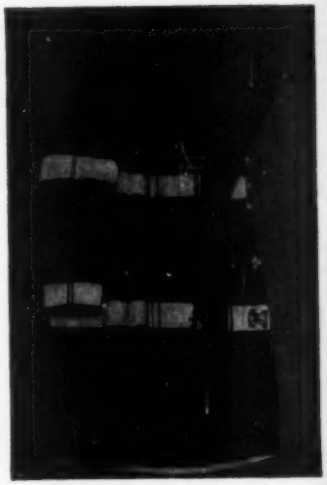
Friend of the Firefighter!

MIDWESTERN
PROTECTIVE CLOTHING

THE Original

Mackinaw Striped Safety Coat

Reduces Accidents — Saves Lives



Several years ago, Midwestern developed the *original* striped safety coat. The highly visible stripes are moulded to and vulcanized as part of the material. Thousands of Midwestern Safety Coats are serving fire departments throughout the world. Service records prove that these garments not only offer high safety visibility, but have the qualities required to withstand the rough usage required in your hazardous work of protecting life and property against fire.

All Midwestern Safety Coats have the moulded-in yellow stripes which are a part of the garment and not painted and sewed on. The *original* Midwestern Safety Coat will give you trouble-free protection and dependable service.

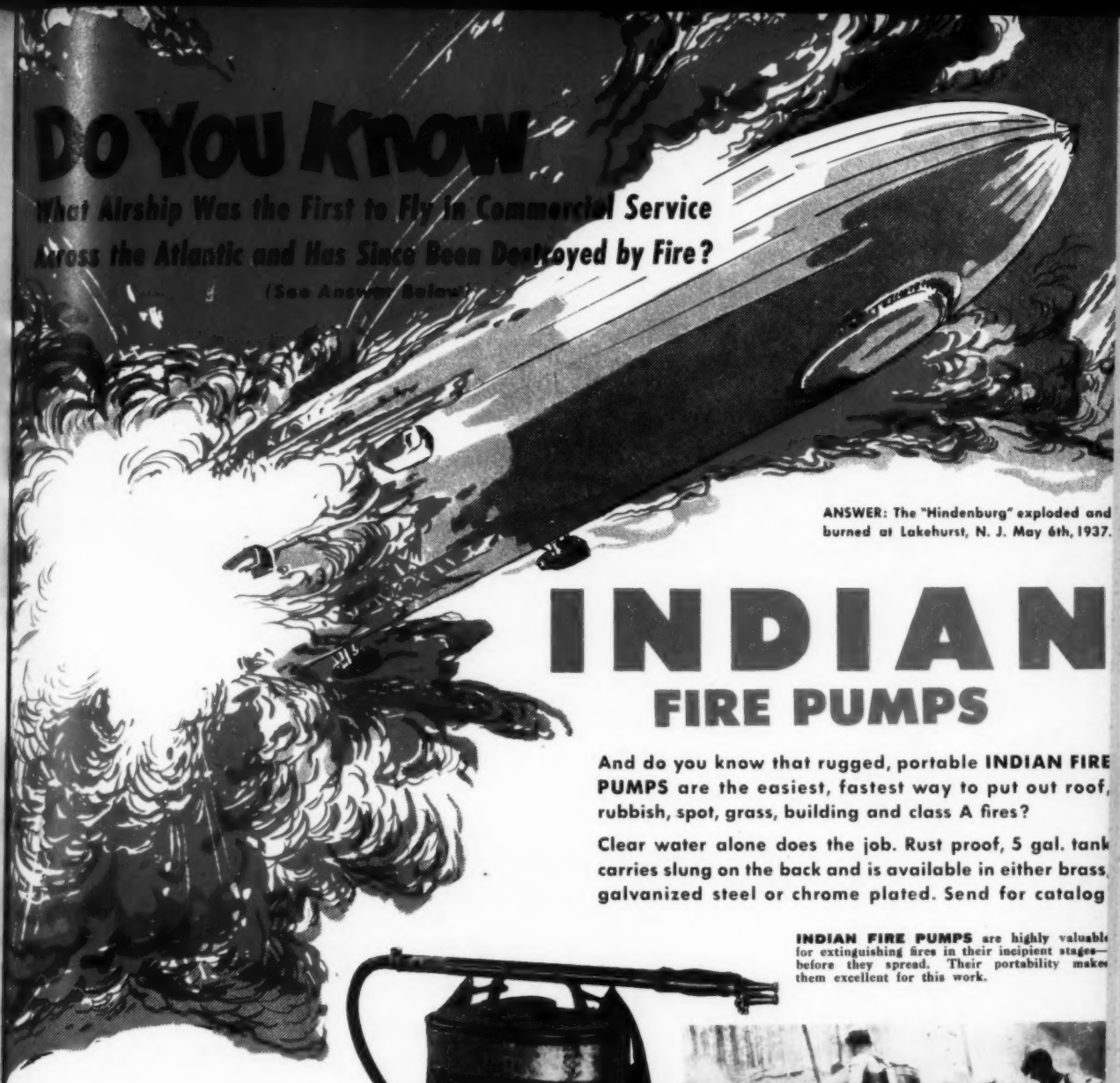
• PROTECTION
• COMFORT
• SERVICE

Largely through superior quality, design, fabric texture and advanced features, Midwestern is a leader in the field of firemen's clothing. All Midwestern specialized protective clothing have been developed from long years of experience . . . and each detail of design adds to the service, comfort, convenience and long wear of the garment.

Regardless of climate and performance demanded, you will find a fabric to exactly suit your needs in our vast selection of crude rubber and fabric materials. The softness and flexibility of the high-grade materials used is your assurance of long service and real protection. For full information on our complete line, see your Midwestern dealer. A letter to the factory will also bring you material samples for your inspection.

NONE GENUINE WITHOUT THIS TRADE MARK

MIDWESTERN MFG. CO., Mackinaw, Illinois
Manufacturers of the Famous **MACKINAW Coats**


DO YOU KNOW
What Airship Was the First to Fly In Commercial Service
Across the Atlantic and Has Since Been Destroyed by Fire?
(See Answer Below)

ANSWER: The "Hindenburg" exploded and burned at Lakehurst, N. J. May 6th, 1937.

INDIAN
FIRE PUMPS

And do you know that rugged, portable **INDIAN FIRE PUMPS** are the easiest, fastest way to put out roof, rubbish, spot, grass, building and class A fires?

Clear water alone does the job. Rust proof, 5 gal. tank carries slung on the back and is available in either brass, galvanized steel or chrome plated. Send for catalog

INDIAN FIRE PUMPS are highly valuable for extinguishing fires in their incipient stages—before they spread. Their portability makes them excellent for this work.

INDIAN FIRE PUMPS make short work of brush and forest fires

CIVIL DEFENSE NEEDS
INDIAN
FIRE PUMPS

to protect communities from fire bombs. Write us now. Be prepared.

All help possible is needed to keep man caused fires from hampering our defense efforts and destroying the nation's natural resources and other property during the coming years.

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Hamilton, Canada

The O-47-A
TRIPLE ACTION BOOSTER

FOGNOZL

TRADE MARK

IT'S PERFORMANCE WILL CONVINCE YOU!

3/16" STRAIGHT STREAM TIP
10 g.p.m. at 100 lbs. P.S.I.

47-14 FOG TIP
15 g.p.m. at 100 lbs. P.S.I.

Also Available—
1/8" and 1/4" SS Tips—
47-9 Fan Tip

NO DRIP

QUICK TRIPLE ACTION
Only ⅓ turn from shutoff to fog—from fog to straight stream

OPERATES AT ALL PRESSURES
15 lbs. P.S.I. to 800 lbs. P.S.I.

INEXPENSIVE

EFFECTIVE IN LOW WATER AREAS

The "Fightingest" BOOSTER NOZZLE that Money Can Buy!

UNEQUALLED • EFFECTIVE

Fire Control of:

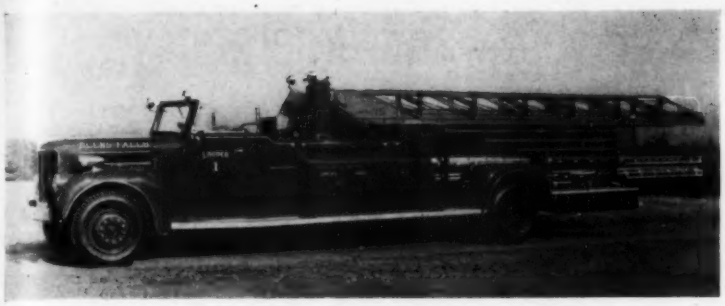
Grass and Brush Fires
Building and Structure Fires
Paint, Lacquer, Varnish Fires
Chemical Fires
Oil and Grease Fires
Tank and Vat Fires
Trash Pile Fires
Gasoline and Fuel Fires
Lumber Pile and Material Fires
And Many Other A and B Fires

SEE YOUR FIRE EQUIPMENT REPRESENTATIVE TODAY OR WRITE TO:

FOG NOZZLE INTERNATIONAL

"AMERICA'S OLDEST MANUFACTURERS and ENGINEERS of WATERFOG EQUIPMENT"

Division of AKRON BRASS MFG. COMPANY, INC., Los Angeles, Calif.
SALES OFFICE — WOOSTER, OHIO

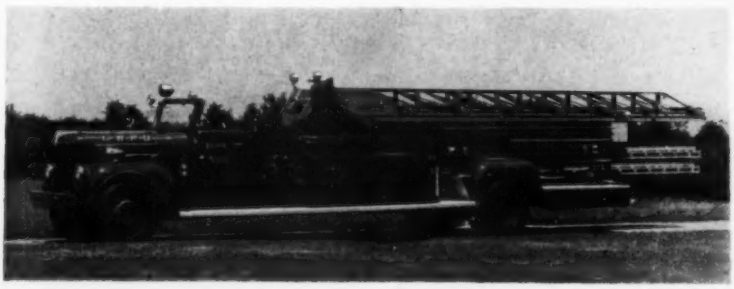


NORTH

Any town, anywhere, can now obtain
MAXIM engineering
MAXIM performance
MAXIM dependability.
Typical example is this 75-ft. aerial for Glens Falls, N. Y.

EAST

Pumpers from 500 to 1500 gallons—here's a rugged example for Boston, Mass. Select any combination you want — then have it MAXIM engineered and built.



SOUTH

Lake Worth, Fla., owns this MAXIM quintuplet — 75-ft. ladder — pump — complete equipment. Apparatus designed to your needs is our objective.

WEST

South Bend, Ind., selected a 750-gal. — canopy cab — pumper — from our complete line of apparatus — pumpers from 500-1500 gals. — all steel aerials 65 ft., 75 ft., and 85 ft.—squad and rescue trucks.

MAXIM MOTOR COMPANY
MIDDLEBORO, MASS.
Americas Finest Fire Apparatus

Ready for emergencies—any emergency

HOMELITE

Carryable

PUMPS GENERATORS and CHAIN SAWS

No matter what the emergency . . . a storm, a flood or anything else . . . you'll need, as history has proved, Homelite Carryable Pumps, Generators and Chain Saws. Fully mobile, easily carried by one man, these gasoline-engine-driven units, give you a highly flexible means of repairing damage and restoring safety in the fastest possible time.

For all types of emergency lighting. With Homelite Carryable Gasoline-Engine-Driven Generators, you can operate brilliant floodlighting for urgent night repairs. You can supply power to restore telephone or other communications paralyzed through loss of normal power. You can supply electricity for hospitals, relief centers, or other urgent requirements until normal power is restored.

For flooded buildings or fighting fires. Homelite Carryable Pumps can be rushed to any flooded area, to pump out cellars fast. Each pump handles up to 15,000 gallons per hour. Pumps water thick with debris without clogging. Can be used also for fighting isolated fires, with water pumped from nearby wells, brooks, rivers or ponds.

For cleaning up the damage. Every disaster leaves a trail of damage. Fast clearing of this damage is essential . . . to rescue lives and to facilitate repairs. Have Homelite Gasoline-Engine-Driven or Electric High Cycle Chain Saws handy for this work. With one of these saws, one man can do more work than two men . . . *and much faster.*

CARRYABLE

PUMPS • GENERATORS • BLOWERS • CHAIN SAWS

PERFORMANCE · DEPENDABILITY · SERVICE

HOMELITE

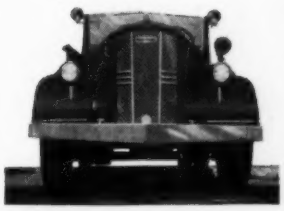
CORPORATION

304 RIVERDALE AVENUE • PORT CHESTER, N. Y.

A $200,000 fire swept St. John's Academy in Rensselaer, N. Y., March 11th, 1950 Wide World Photos

where performance counts

choose WARD LaFRANCE pumpers



From the time the call comes in until the fire is out, you can rely on Ward LaFrance for dependable performance. Why — because every Ward LaFrance Pumper is especially fitted for its particular job, is rigidly tested before delivery to prove its fire-fighting ability.

With engines in 130, 150, 200 and 240 H.P., a complete coverage is available to skillfully provide weight-to-horsepower ratio to give quick get-away for every occasion, plus plenty of power for climbing hills. In addition, each Ward LaFrance Pumper is equipped with the famous Waterous split housing pump — surplus gallonage that far exceeds its rated capacity — flat horizontal booster tank — and exceptional hose capacity.

Next time, consider Ward LaFrance first when you're ready to select or replace apparatus for your community. Write today for illustrated bulletins.

WARD LaFRANCE
TRUCK CORPORATION
Fire Apparatus Manufacturers for over 30 Years

GENERAL OFFICE & FACTORY: Grand Central Avenue, Elmira, N.Y. *Tel. 5171*
DIRECT FACTORY BRANCH: 139th Street & Bruckner Blvd., New York 54, N.Y. *Tel. CYpress 2-3300*
EXPORT: Ward LaFrance International, Inc., Elmira, N.Y., U.S.A.
Cable Address: "WARDTRUCK"

Tops in Performance

TOPS IN PERFECT LOOKS AND DEPENDABILITY, TOO!

This good-looking, sturdy, self-contained pumper is one of two recently delivered to Borough of Shrewsbury, N. J. This is a 500 GPM pumper with Champion 3-stage hi- and lo-pressure—carries 800 gals. of water in booster (with manhole for cleaning and painting), 1200 ft. of 2½" and 250 ft. of 1½" hose, compartment-style body with full equipment. This is typical of the many jobs we have built and delivered to towns along the Eastern Seaboard. Write for further information and specifications.

DEALERS: A few select territories available—write or phone.

H & H

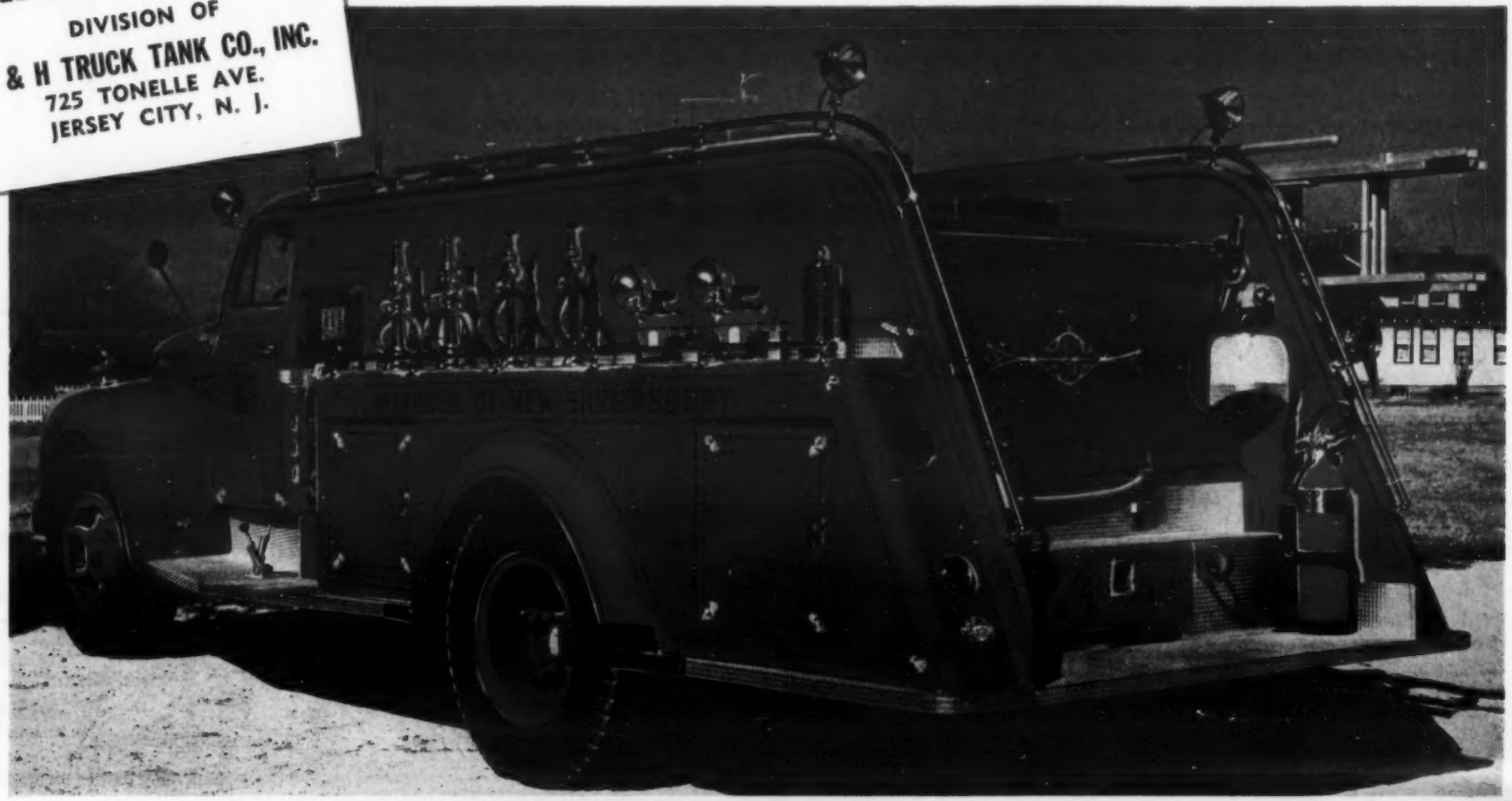
FIRE APPARATUS

DIVISION OF

H & H TRUCK TANK CO., INC.

725 TONELLE AVE.

JERSEY CITY, N. J.



Please mention FIRE ENGINEERING *when writing advertisers*

for A

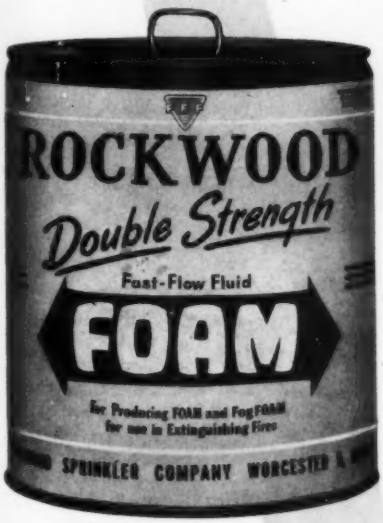
ROCKWOOD'S

New Modern Chemicals and Fire Fighting Tools Whip Gasoline Fires Faster and More Economically

The new Rockwood *Double Strength* Fast-Flow Fluid FOAM used with Rockwood's advanced types of FogFOAM and FOAM Nozzles will cover burning surfaces faster with a blanket of FOAM that completely seals off combustible vapors. This new Rockwood *Double Strength* FOAM is now available for use with hose line nozzles and permanently piped FogFOAM and FOAM systems.

We recommend these new modern chemicals and fire fighting tools to every municipal fire department, industrial plants and refineries for handling the increasing hazard of fires in flammable liquids and materials.

For the most advanced line of fire fighting products offered to firemen in half a century, write Rockwood Sprinkler Company or your nearest distributor.



ROCKWOOD *Double Strength* FOAM

Rockwood's outstanding new FOAM Liquid produces FOAM and FogFOAM for use in extinguishing fires in oil, gasoline and other highly inflammable liquids and materials. It is more fluid, faster spreading and easier to handle. Rockwood Regular FOAM—the type previously supplied—is still available for use with Rockwood devices.

NEW FFF FogFOAM NOZZLE with SCREEN

New LIGHTweight Type FFF Rockwood FogFOAM Nozzle. Available in three sizes for service on 1½" and 2½" or 3½" hose. Discharges (1) FogFOAM (with FogFOAM screen) (2) solid FOAM stream (with FOAM shaper) (3) high velocity WaterFOG pattern.

with FogFOAM SHAPER

Rockwood LIGHTweight type FFF FogFOAM Nozzle with FOAM shaper attached.

LOOK OVER THESE OUTSTANDING ADVANTAGES...

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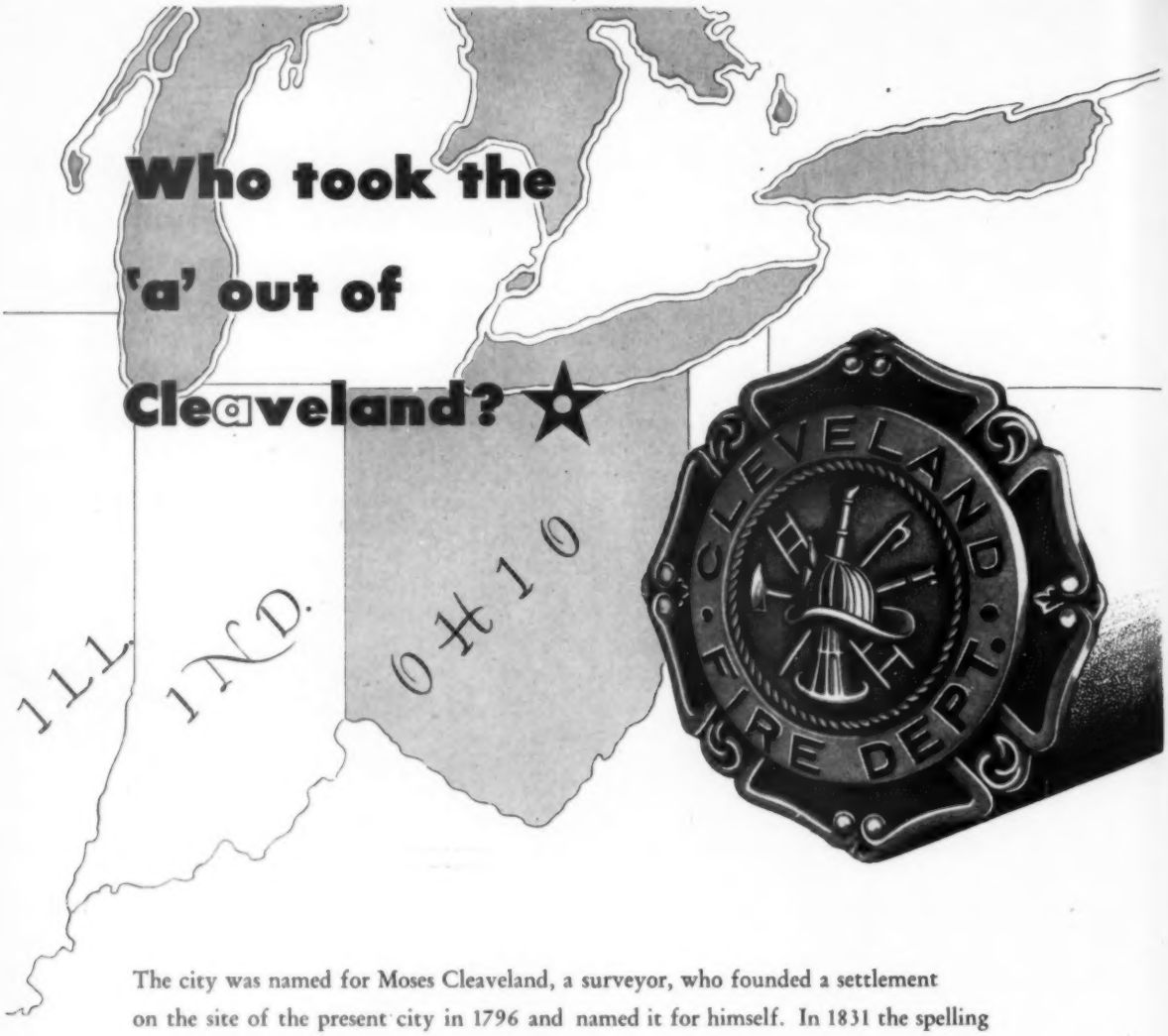
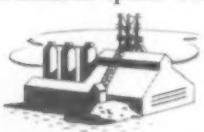


The city was named for Moses Cleaveland, a surveyor, who founded a settlement on the site of the present city in 1796 and named it for himself. In 1831 the spelling of CLEAVELAND'S name was changed by a newspaper printer so that it would fit a headline space. From that time on the city's name was spelled CLEVELAND.



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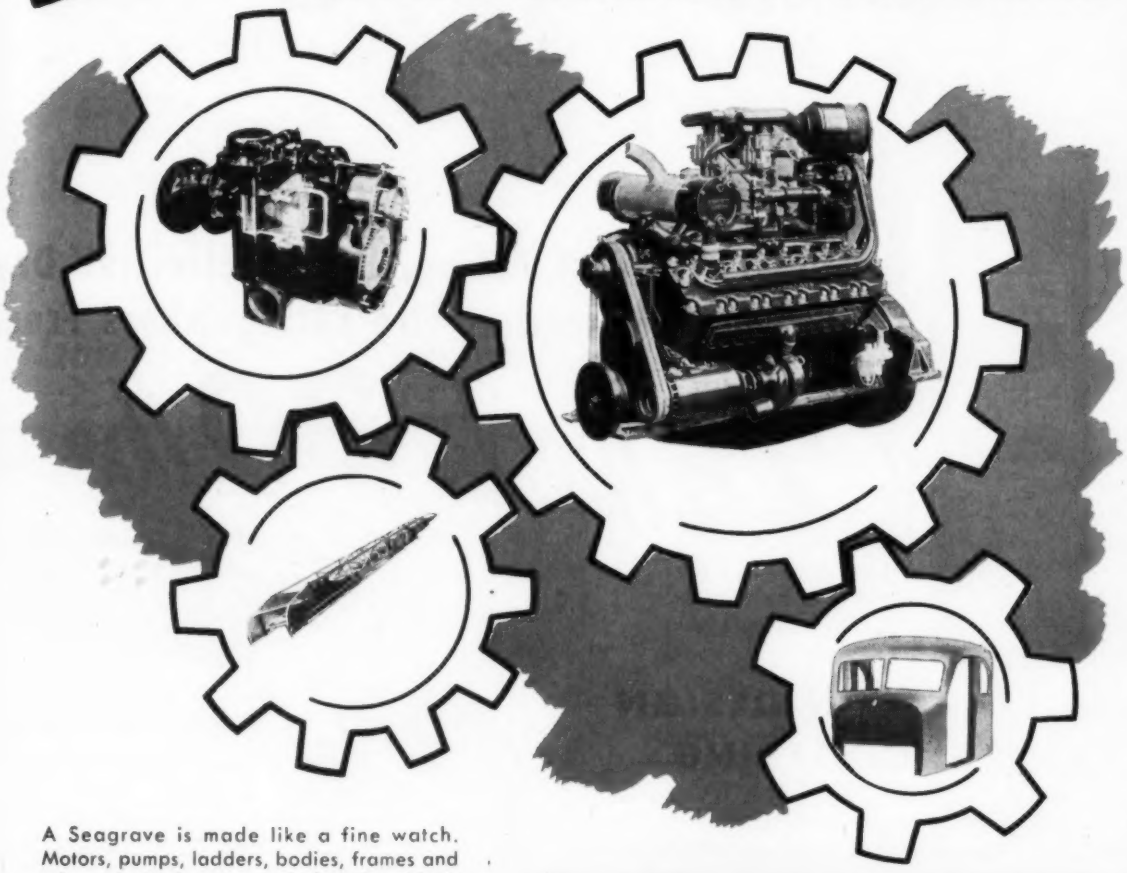

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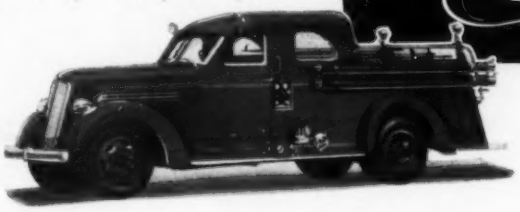

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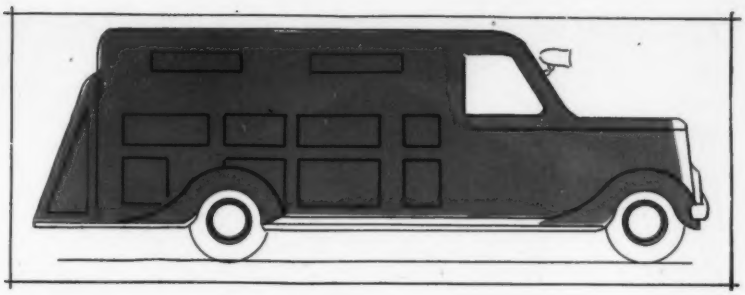

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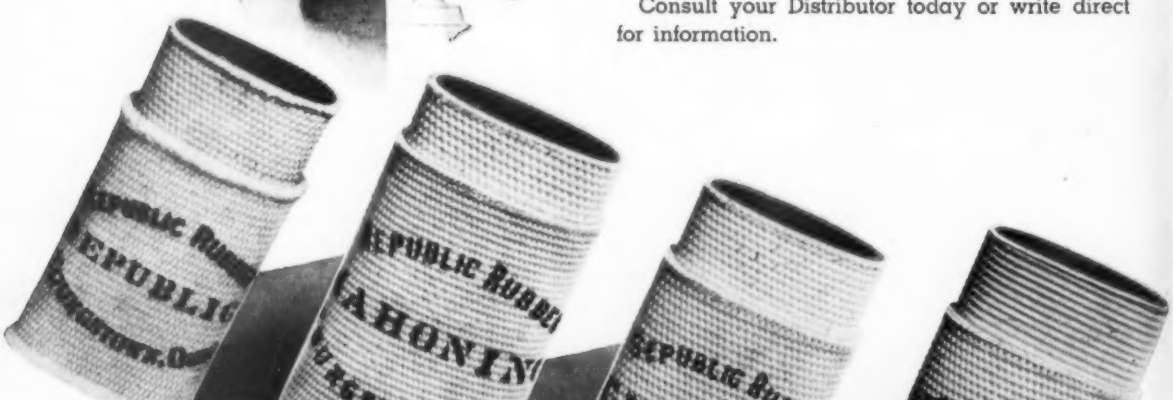

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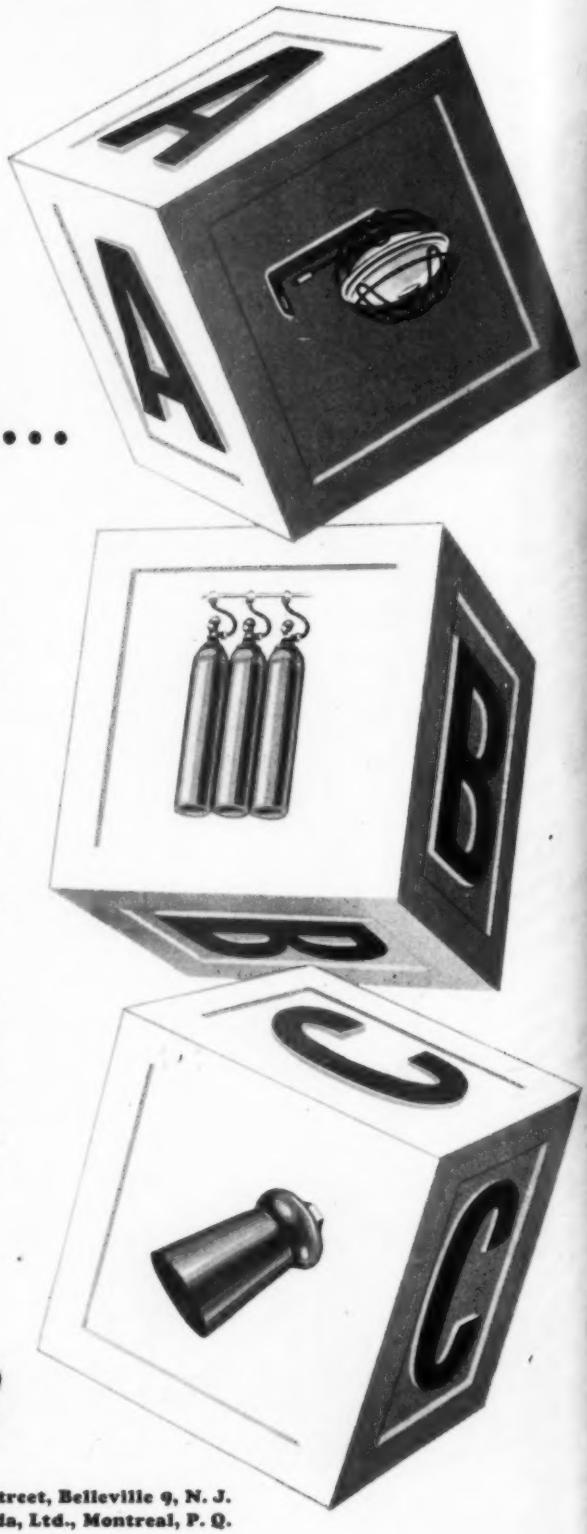

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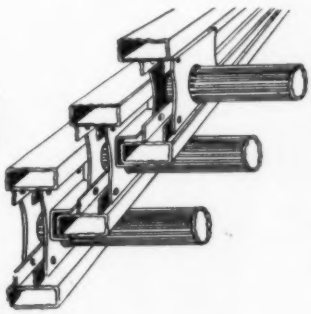

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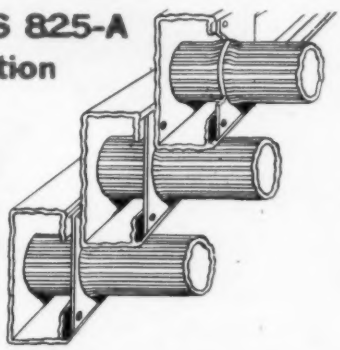

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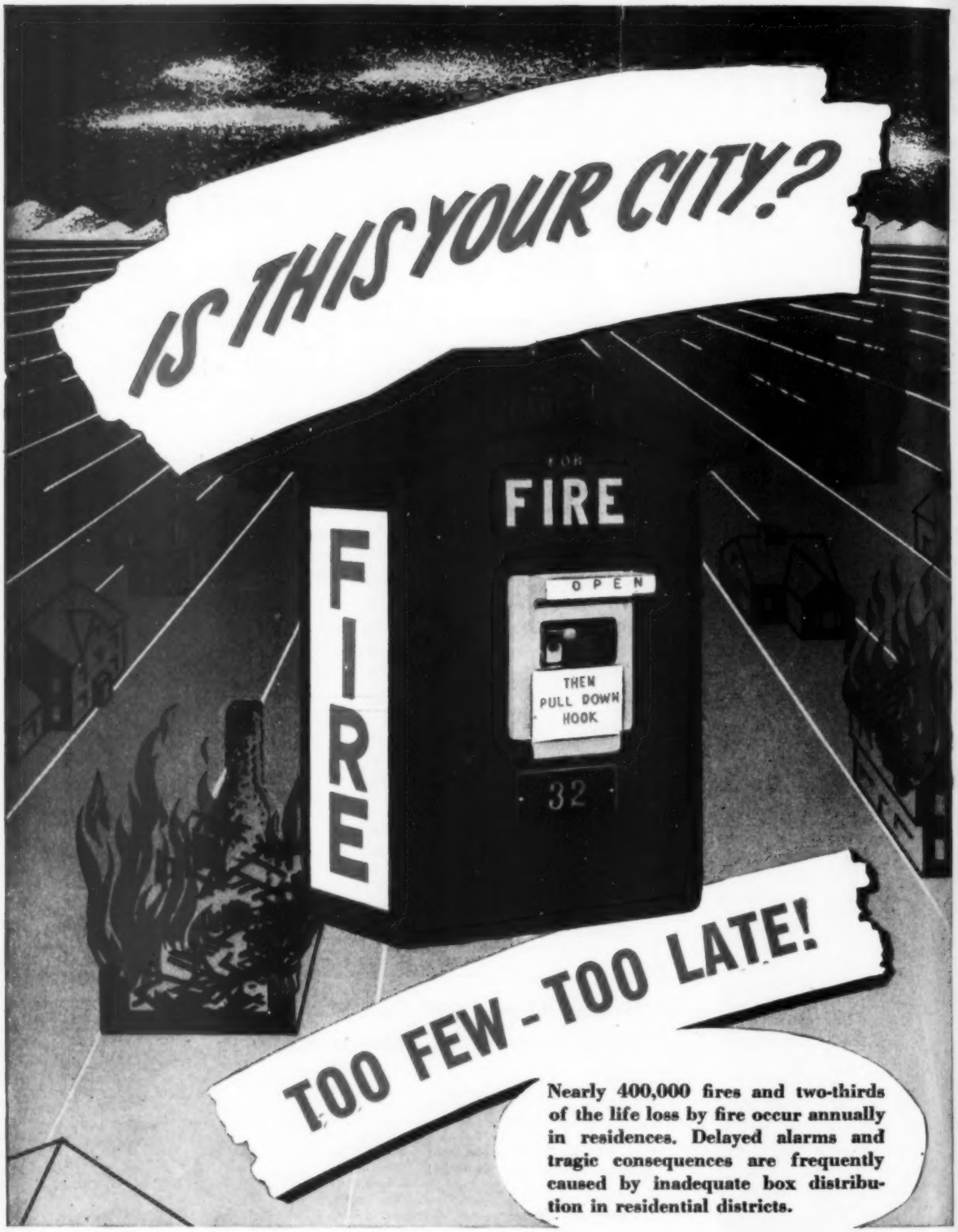
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APRIL, 1951

FIRE ENGINEERING

VOL. 104, NO. 4

With the Editor

Left Alone—With Death! Statisticians may debate the details of the nation's financial losses from fire, whether the mounting figures are the result of the inflationary dollar or not, but one detail of present-day destruction by fire cannot be argued: that is the problem of the growing fatalities, particularly among the very young and very old, from this scourge!

Those who are in touch with the fire mortality figures of the nation, shrink from the recurrent reading of such items as this, from U.P. wires, dated St. Louis, March 25: "Two children were burned to death last night when an oil stove exploded and set ablaze the apartment in which they were sleeping alone. . . . Their parents were out at the time. Two neighbors were burned in a vain attempt to reach the youngsters."

Left alone with death! Almost every day press and radio recount similar tragedies. Almost every day, fire chiefs and their men, most of whom have youngsters of their own at home, have the dread task of searching through fire-ravaged ruins for the "missing," and reach the sickening end of their search when they come upon the bodies of little ones in closet, or under the bed, or other hideaways to which they had fled for the refuge that wasn't there.

Left alone with death! In spite of all the efforts of the fire service, of fire prevention and safety engineers, the ghastly toll mounts. Here, it seems to us, is a condition that ought to be dragged into the same sort of limelight that has been focussed on the criminals, gamblers and crooked politicians by the Kefauver and other investigating committees!

To our prejudiced viewpoint, it seems too bad that the "Save children from fire" drive sponsored by the International Association of Fire Chiefs, and sparked by the National Board's Jay Stevens, and others, can't receive this same "blinding white light of publicity."

Left alone with death! You chiefs who read this —*you* can do the nation, the fire service, and yourself—and your own department, a great and lasting service, if you will preach the gospel of properly safeguarding the children of *your* city, town, or community, from deadly fire. And it isn't necessary to wait for the October Fire Prevention Week to begin the good work!

The Line's Busy! Almost immediately after the Woodbridge, N. J., train wreck, which killed 84 persons, it became necessary to use the telephone for emergency messages of importance. But, we're told, all but a single unlisted telephone near the wreck were out of order.

The reason has never been aired, but it should be, and firemen should remember it. Those telephones were "out" because, following the crash, about every person who could navigate headed for the nearest phone to call his home and tell relatives or friends that he was all right. That tied the system in a knot. When firemen and emergency workers sought to use them, all lines were "busy."

Only a single instrument, located in the Woodbridge emergency squad quarters we're told proved the sole reliance for wire communications until the telephone company rushed special emergency instruments to the scene. To give them due credit, they wasted no time in this operation, but it took many vital minutes.

With practically all phones "out" the only hope was radio. Although police short wave radio was at least partially successful, it failed to stem the stampede of rescue and other emergency forces that converged on Woodbridge from as far away as Atlantic City, the Oranges, and even Philadelphia. These willing workers came on the run, and needlessly, when they picked up the uncoordinated appeals for aid broadcast over both police short wave and public commercial broadcast stations.

The "blow-by-blow" public broadcasts also brought droves of morbidly curious, to jam and block highways and clutter the limited street and sidewalk approaches to the wreck in Woodbridge. Many responding fire units never got within siren distance of the disaster!

This isn't the first time New Jersey has faced similar situations. They existed at the South Amboy explosion, the Palisade Park fire, and at other large scale crises. The question naturally arises—how long must it be before the fire and other disaster services of that state (and other states) recognize the fact that *disaster emergency operations can be no more effective than the available communications facilities permit them to be.*

Fred Shepperd

Burning Characteristics of Building Materials

Underwriters Laboratories Develop Scientific Approach to the Determination of Burning Characteristics of Wood and Other Materials

By A. J. STEINER

THE title of my talk as given on the program is "Burning Characteristics of Building Materials" which I hope will clarify a relatively new approach to the subject of fire protection. You have heard fire protection men explain that building construction is important in the reduction of fire losses and also how buildings are designed to contain fires within certain areas, by proper design and location of fire walls of brick or concrete with partitions having one, two, or four-hour fire-resistance rating and the openings protected by wired glass steel windows, tin-clad or sheet-metal fire doors, also the use of signalling devices to report incipient fires and sprinkler systems and fire extinguishers to check them until the fire department arrives. The records show that these safeguards have been successful but in recent years these well designed buildings have been remodeled and modernized and the walls are treated to improve their appearance and for acoustical correction as well as to improve insulation properties or it may have been necessary to subdivide large areas for various reasons. These changes often upset the fire safety which has been planned, especially if certain kinds of materials were used.

After fires in such remodeled buildings, it is not uncommon to hear someone say, "That was a bad fire, it spread fast—faster than fires have in the past," or "It was a flash-over fire." The cause for such performance seems to be a mystery, but eventually someone decides that a new type of finish or lacquer, or paint, was the cause. In my humble opinion, such conclusions are expressed by persons who are not aware that many materials used in building remodeling sometimes spread fires more rapidly than would have been the case with materials with which we are familiar.

Editor's Note: **One of the highlights of the 23rd Annual Fire Department Instructors Conference held in Memphis, January 11, last, was a paper delivered by Mr. A. J. Steiner, Engineer, Protection Department, Underwriter's Laboratories, Inc., Chicago, Ill. Mr. Steiner took for his topic the work being done by the U.L. to develop standards for measuring the speed of burning of wood and other materials, and the degree of smoke and toxic properties given off in the products of combustion.**

The editors of Fire Engineering are pleased to publish excerpts from Mr. Steiner's able paper together with photographs of the testing furnace in operation at the U.L. Grateful acknowledgement for permission to publish this message are extended to Mr. Richard Vernor, Chairman, Fire Department Instructors Conference, to the Underwriter's Laboratories, through Mr. Norman H. Davis, Jr., Asst. Secretary, and to the author, Mr. A. J. Steiner.

Veneered Paneling Contributed to LaSalle Hotel Fire

May I remind you of some recent rapidly spreading fires where it was documented that they started in a location where certain kinds of materials were used in the remodeling or redecorating existing, well constructed or so-called fire-resistive structures. The Chicago LaSalle Hotel fire, in which many lives were lost, was apparently started in a room remodeled with building boards applied with concealed air spaces behind them. As you know, the fires spread very rapidly and the fire department was on the spot because the fire got away into the lobby area where the walls had wood paneling. Some of the paneling was brought to Underwriters' Laboratories and in a test developed by them, and which I will describe, it was demonstrated that the rate of spread of fire on the panel surfaces was 5½ times as fast as it would have been had the paneling been solid oak. Why? Because it was veneered paneling and not because it had too much varnish or lacquer finish. The test showed that when the paneling was heated, the veneer peeled and the thin loose paper-like sheets spread fire rapidly. The oxygen used to maintain the fire on the rapidly burning paneling together with the rapidly burning boards used in the remodeled area was drawn from sections of the building occupied by people in the upper floors who were asphyxiated because of lack of oxygen.

In this fire the rapid spread required extra oxygen which was obtained from the hallway on upper floors where the doors were not properly closed and these hallways served as air ducts supplying oxygen to the fire from the area where the oxygen was needed for life.

Now you see, there was nothing new or fantastic about the fire except that the arrangement of building materials was such as to produce the flash conditions which are now so common. Undoubtedly many of you appreciate that similar conditions exist in buildings with which you are familiar and, if the conditions are right, serious bad fires may occur.

Other similar examples are the Coconut Grove in Boston in which decora-

The Burning Characteristics of Building Materials Are Tested at Underwriters Laboratories, Inc. Here an Engineer Checks a Sample of Untreated Wood Flooring Which Has Been Tested in the Fire Hazard Classification Furnace

tions were the cause for the catastrophe and at the St. Anthony Hospital, the acoustic tile placed on the walls and ceilings of the hallways played their part. Industrial buildings of steel structures enclosed with corrugated steel coated with asphalt have for many years not been considered as a possible fire hazard, but in recent years a number of bad fires occurred by rapid spread of flames on such surfaces. There may be some excuse for past performance because no reliable method of evaluating fire spread on building materials has been developed.

Wood Not the Only Hazardous Building Material

About 25 or more years ago, when I became interested in fire problems, wood was considered a hazardous material from a fire viewpoint, but in recent years technical developments due to economic conditions brought about by the ever increasing price of lumber and labor for erection, resulted in chemists, in cooperation with mechanical engineers, creating new products which burn many times faster than wood. We at Underwriters' Laboratories realized the need for an answer to questions coming to us from those having responsibilities of protection against fire about the burning characteristics of new type of materials to be used in new constructions or those which had been used and which created the mystery as to the reason for its behavior in fires which have already occurred. We have received many times, samples of materials with questions, "How will this burn?" or "Is this combustible?" or "How will this burn in comparison with wood?" These are difficult questions to answer unless you have a proper test method to evaluate the burning characteristics with material such as wood or other materials which have been commonly used in the past.

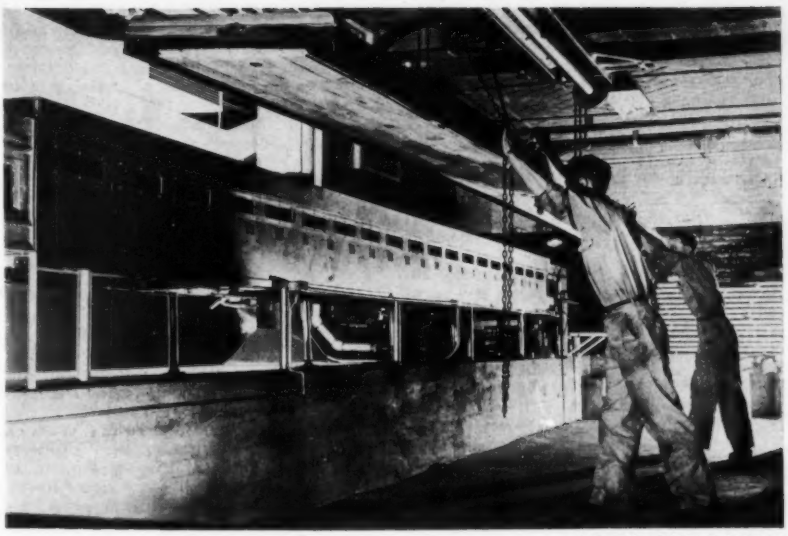
Underwriter's Test Method Is Simple but Effective

The test method we have developed is very simple. It is based on the fact that wood will spread fire and cement concrete will not. Of course, there are people who will not admit that wood will spread fire, but I am sure that men with your experience will agree with my statement, "That if conditions are right, wood surface will spread fire."

In our test we have demonstrated that some species of wood will spread fire faster than others and the moisture content of wood is also important. Also veneered lumber may spread fire five times or more faster than oak, as is the case of the paneling in the LaSalle Hotel fire previously referred to. In order to compare the burning characteristics of different materials, it is necessary to test them under identical conditions.

I want to remind you that nothing will burn if it is not heated to ignition temperature, and moisture, rate of air travel and the size or intensity of the exposing fire in relation to the material to be ignited are important.

In our tests, all materials are conditioned to a moisture content stability under standardized conditions of approximately 70° F. and 35 per cent relative humidity. The test fire conditions, that is, air travel and moisture content of the air and the size and intensity of the fire, are regulated so as to permit wood to burn. As I have said before, these conditions must be regulated or wood will not burn. We have repeatedly demonstrated in this equipment that wood will not burn by changing the conditions of the exposure. When such results are obtained, common sense should be a warning that there is something wrong with such test.



Underwriters' Laboratories Photo

Placing in Position the Furnace Top with Test Material Attached Beneath (in This Instance Tongue and Groove Wood Flooring)

A good example for the necessity of control to attain ignition can be illustrated by the difficulties sometimes experienced in obtaining ignition in your automobile. The tank may be full of gasoline and the battery in first-class shape, the spark plugs producing a good spark, and when trying to start the car you smell the gas and see it dripping, indicating that there is sufficient fuel, but the engine will not start unless the carburetor is properly adjusted. You cannot get ignition in your engine unless all conditions are right within reasonable limits. The same thing holds good for ignition of building materials.

My theory is that more fires, bad fires, occur in buildings during the heating season because all combustible materials have been dried and the moisture in the air is less and, therefore, materials will ignite easier and burn faster. The conditions are more favorable to ignition.

Now that I have explained the reasoning for the development of the tests whereby the burning characteristics of building materials can be measured, I would like, to picture our test equipment and show how we conduct the tests. I want to emphasize that the test is a simple one and is based on the fact that wood will burn and equipment must so demonstrate. The details of the equipment I will describe are unimportant as to the size of sample, but the conditions must be such that the surface of wood will spread fire.

A New Type of Burning Test Furnace

The test surface of the material is 20 ft. long, 20 in. wide and is mounted to form the top of a long rectangular insulated tunnel. The air passing through this tunnel is regulated to about 200 ft. per minute. One end of the test surface is exposed to a flame created by about 7 cu. ft. of gas per minute and is about 4½ ft. long, creating a temperature of about 1400 to 1550 F°. The size and intensity of the exposing flame was developed after experiments and repeated tests that the fire will spread on red oak surface and that the results can be repeated.

These conditions are not optimum fire conditions, but were selected so as to produce a flame spread on the wood surface at such a rate that the entire surface would be in flames in about 5½ min. We could change the conditions so that the flames would spread in a minute and a half to two minutes over the surface, but it would be too fast to give us time to make the desired observations on such details as the temperatures and quantity of smoke developed. The smoke is measured by the intensity of an electric light beam on a photoelectric cell through the duct running from the furnace to the stack and through which the smoke passes. The variations in the density of the smoke are recorded. We have also made provisions for taking samples of gases during the test for examination as to its toxicity.

We have found that a 10 minute exposure was sufficient to provide us with complete information needed as to the burning characteristics of the material and, therefore, the test is run for 10 minutes during which time three properties are recorded, namely, the rate of spread of fire, which is done by observing the time when the flame is seen progressing along the surface; second, the fuel contributed to the exposing fire, by the temperatures recorded as developed at the end of the tunnel opposite the exposing fire, third, the density of the smoke and the toxicity of the products of combustion. By recording these details under standardized conditions, the results provide us with a basis of 100 and 0 points on a scale in the tests of red oak and on cement asbestos samples, respectively.

The accompanying charts show the recording of the three properties previously referred to and explain how the classifications are established.

Chart No. 1 is for fuel contributed and please note that the top curves show the temperatures developed during the exposure of red oak, white pine, fir, and yellow pine and the bottom curve shows the temperature of exposure of cement board. The areas under these curves constitute the 100 and 0 points on the scale of classification.

Chart No. 2 shows the rate of flame spread. The top curve plots the distances that the flame reached at a given time in tests of red oak, while pine, yellow pine and fir. Note that it is a gradual spread and the distance increases as the time of the test progresses. Also, observe the bottom curve, which indicates no spread occurred. The difference in the distance produced and also to some extent, the time in which it was produced, provide the scale of classification of 100 for red oak and 0 for cement.

The third chart shows the density of the smoke and again showing the constant density in the case of cement and the variations in the case of the smoke developed with red oak, yellow pine, white pine and fir and thus, by means of the area under these curves, we are in a position to establish the 0 and 100 point on the scale of classification.

By this test method, we have shown that untreated fabrics, like muslin folded in folds as sometimes used for decorative purposes in places of assembly, will spread fire to earn a classification of 2000 which means that the fire will spread twenty times as fast as on red oak and similarly we have observed that the vapor seal on the face of some insulating materials will spread 25 to 30 times faster than that on a red oak surface.

Materials of this type are used in insulating homes and I venture to say that if a person went into an attic of a house which had the roof insulated with such materials, that person would be trapped if the material were ignited. You undoubtedly recall fires in bowling alleys which were totally ruined and in many cases lives were lost because fire spread rapidly. In such fires, the blame has been directed to the finish on the floors and to the lacquer on the pins and in the hazard existing in the refinishing room, but it seems that the materials on the walls and ceilings have been overlooked. The materials used and the concealed spaces and air conditions were the direct cause for the rapid spread of fire resulting in total destruction and, in a number of cases, loss of life.

This classification provides you with a tool for judgment as to how a material will burn in comparison with wood when exposed to similar fire conditions.

Civil Defense Manuals Announced

Three civil defense manuals for New York City's residential and working population, have been compiled and are being distributed to property owners and management firms throughout the city by the Commerce and Industry Association of New York, Inc., it was announced by Edmund F. Wagner, Chairman of the Association's Property Owners Committee and president of General Realty & Utilities Corporation.

The Manuals, which outline procedure for setting up effective control organizations in Apartment Buildings, Office Buildings, and Industrial and Loft Buildings, respectively, were completed after months of study by a special Committee on Civil Defense of the Property Owners Committee, composed of the city's top realty management executives, with Diedrich F. Lehnert, Vice-President of Albert B. Ashforth, Inc., as Chairman.

The City's Office of Civil Defense and various municipal departments cooperated with the Association's special committee in preparation of the manuals, which have been officially approved by Civil Defense Director Arthur W. Wallander.

Principal recommendations prescribe duties and responsibilities of designated building personnel such as Control Director, Deputy Control Director, Floor Wardens, Stair Wardens, Shelter Wardens, First-Aid Workers, Rescue Squad, Fire Brigade, Fire Watchers, Maintenance Squad and Messengers. Facilities for use of the Building Control Unit unclude Control Room, Alarm System, Shelter Areas and Signs, First-Aid Stations, Fire-Fighting Equipment, Auxiliary Lighting, Panic Control and Accommodations for people coming from the street.

Included also in the manuals are instructions on the types of signs to be used to indicate routes to shelters and shelter zones, and their location; check list of fire-fighting and rescue equipment recommended; basic fire-fighting principles; subjects for consideration in training of rescue teams; schedule of items for first-aid use and for kits.

A listing of emergency telephone numbers, with space provided for similar listings of local area numbers, is intended to be removed and posted in a building control room. Also provided are forms of suggested letters to tenants soliciting emergency personnel and advising them of the action they are to take in an emergency.

Copies of the manuals can be obtained from the Property Owners Bureau of the Commerce and Industry Association, 233 Broadway. To cover the cost of printing and handling, a charge of 15 cents each and $12.00 per hundred or more (plus City Sales Tax) is being made.

Fire Razes School

A three-alarm fire, one of the most spectacular in many years at Middletown, Conn., ruined the Central Grammar School on January 11, causing damage estimated at $500,000 by Fire Chief Franklyn Dunn.

Chief Dunn said the fire, which was fought for six hours, started in a waste paper chute on the first floor of the main section, and mushroomed into the attic. Damage was confined to the three-story structure, which is located on College Street, near Wesleyan University.

The fire broke out shortly after 1 a.m., and at its height was fought by three Middletown fire companies, augmented by a detail from the State Hospital at Middletown, two companies from Portland, located across the Connecticut River, and several Wesleyan students, who joined the firefighting forces.

The Central Grammar School was erected in 1941, but two additions had been made since that year.

TOM MAGNER

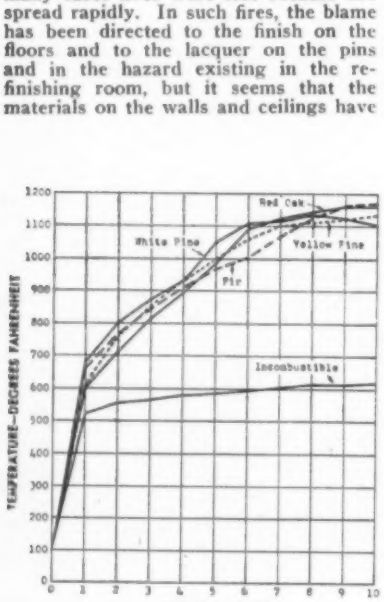


Chart No. 1—Fuel Contributed

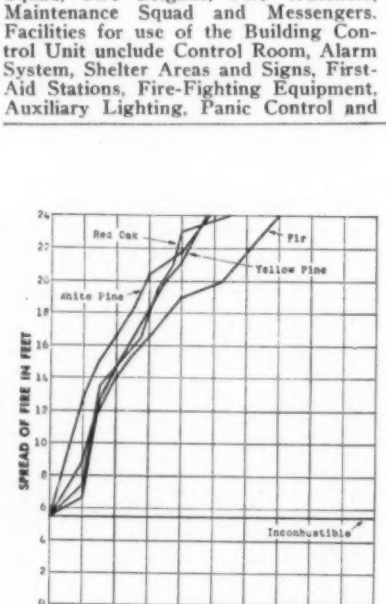


Chart No. 2—Rate of Spread of Fire

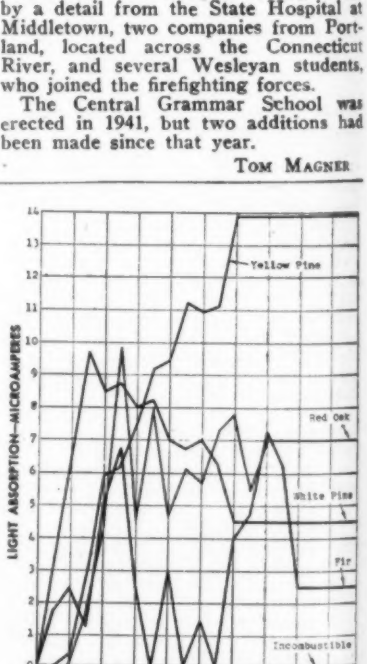


Chart No. 3—Smoke Density

Chicago "Atom-Bombed" During Test of Civil Defense Plan

"Attack" Begins at 6:25 a.m. With First Bomb Exploded Over City

By Paul C. Ditzel

CHICAGO, Illinois, recently was subjected to a mock atom-bombing for the purpose of pre-testing parts of its plan for coping with disaster should an atomic bomb, or bombs, ever be dropped on the city. Chicago's plan—"Operation Civil Defense," as outlined in Special Order XXX—was described in the January, 1950, issue of Fire Engineering.

The account of the bombing was published under the title of "Solution of the Fire Problem of Hypothetical Bomb Blast Exercise," by Chief Frank C. McAuliffe, of the Chicago Fire Insurance Patrol and chairman of the fire service committee of the Chicago civil defense committee.

Chief McAuliffe presented the problem during a five-day critique in Chicago under the auspices of the National Security Resources Board.

The critique was attended by 1,750 persons from 20 states, 150 cities, towns, or counties, and two foreign countries. They came to Chicago to learn how the city's 43 civil defense committees coped with a hypothetical atomic bomb assumed to have fallen on the city September 18.

Following is a blow-by-blow account of what could have been expected in fire operations if Chicago suffered an atomic attack on September 18:

5:35 a.m.—Alert received from Civil Defense Air Raid Warning Division. Fire alarm office transmitted Signal "9-9-9-9" over the fire department registers. Fire companies went to dispersal locations as previously determined in Special Order XXX. All companies reported they were "in service" at designated locations by 6:00 a.m.

The First Deputy Fire Marshal had ordered Division Marshals to report verbally on the recall of off-duty firemen, gasoline supplies, extra hose, and fire clothing. The Division Marshals reported that recall had been effected and that equipment was as required.

Division Marshals indicated some companies were having difficulty in obtaining gasoline because of the early hour. However, they expected that all companies would have a full gasoline supply within a short time.

The Drillmaster arrived at headquarters Fire Alarm Office with the Chief Fire Alarm Operator ready to dispatch companies. Additional off-duty operators were on their way to both fire alarm offices. The Fire Marshal Mechanical Division was alerted and would soon be ready for duty.

6:25 a.m.—Sounds indicating two successive tremendous explosions in widely separated areas and high columns of smoke became visible on the north and south sides of Chicago.

The Englewood Fire Alarm Office reported immediately that one blast had occurred south and slightly west of their office. Outside telephone calls began pouring into the fire alarm offices and operators were determining the locations of the blasts.

The Englewood Office reported communications were disrupted south of 87th Street and west of Cottage Grove Avenue. The Downtown Fire Alarm Office contacted the A.D.T., which reported its communications intact west, south, and north. But the Downtown Office had no communications north of North Ave., except northwest on the line of Milwaukee Ave.

These communications supplemented by ADT runners were used effectively thereafter for additional liaison between the Downtown Fire Alarm Office and the forces in the field.

The First Deputy Marshal responded immediately to the south blast and the Second Deputy similarly responded to the north blast. The Fire Alarm Office sent 27 engine companies, 12 hook and ladder companies, eight battalion chiefs, four squads, and three ambulances to the south blast to set up command posts as provided in Special Order XXX.

Likewise, 27 engines, 11 hook and ladders, 8 battalion chiefs, four squads, and two ambulances were sent to the north incident.

Meanwhile, the repair shop superintendent dispatched reserve equipment as follows: To the dispersal stations closest to the north blast, six engines, four hook and ladders, six tractors, two high pressure wagons; to the south blast: six engines, three hook and ladders, six tractors, and one high pressure wagon.

The foregoing constituted dispersal station reserves for use by the chief officers at the blast areas.

This left a standby force of 29 engines, 14 hook and ladders, five battalion chiefs, one squad and two ambulances suitably distributed throughout the city and in direct communication with the Fire Alarm Office.

There were 41 engine companies, 18 hook and ladder companies, seven battalion chiefs, four squads, and five ambulances unaccounted for on the Fire Alarm operational chart at this time.

New York Also Stages Disaster Drill

"Injured" are being rescued in disaster area. Directly behind rescue crew is technician using a Geiger counter to determine radioactive concentration. Drill was held adjacent to Bellevue Hospital where a group of buildings were being razed.

7:00 a.m.—Officers in charge of command posts were requesting additional companies. These requests came from street boxes and fire station telephones. Ten engine companies and six hook and ladder companies were dispatched to augment the forces at each blast area.

7:05 a.m.—Central Control reported that 58 engines and 10 hook and ladders had responded to mutual aid calls and were instructed to report to the various dispersal stations where they were guided by retired firemen from the pool of 400 retired firemen who had reported soon after the alert.

7:10 a.m.—The Fire Alarm Office was informed that off-duty firemen were arriving at their predetermined stations and that several mutual aid companies had reported at the various dispersal stations for assignment. Division Marshals were instructed by the Drillmaster to put 35 trailer pumpers in service immediately. Off-duty Division Marshals were equally distributed at command posts of both blast areas at this time.

7:20 a.m.—First Deputy Fire Marshal reported that companies were needed in Blue Island, Illinois (a Chicago suburb), and on the southeast side of the south blast area. He stressed the need for the Division Marshals to expedite the dispatch of off-duty men to their companies.

The First Deputy also requested Primary Control to send heavy duty equipment, particularly bulldozers, to all command posts in his area as soon as possible to augment other heavy duty equipment and repair shop tractors already engaged in rescue and clearance work.

The Deputy reported that normal water supplies were poor but that Water Department crews were already working to improve this situation. He also reported that he was using water from a gravel pit at 122nd Street and Vincennes Avenue (500,000 gallons) and another such pit at 85th Street and Rockwell Avenue (550,000 gallons capacity.)

Primary Control had sent word that the Transportation Division had spotted 25 tank cars of water near 119th and State Streets, and an equal amount near 119th Street and Kedzie Avenue which the First Deputy was instructed to use.

7:25 a.m.—The Second Deputy reported that Dispersal Headquarters No. 2 (station directly North of area in which communications were disrupted) was intact and that all equipment: seven engines, three trucks, one squad, two battalion chiefs, together with four engines and one hook and ladder from Evanston, Illinois, were working on the north side of his blast area but were without fire communications. This reduced the previously reported missing companies by seven engines, three hook and ladders, one squad, and two battalion chiefs.

The Second Deputy also reported that the main body of the fire in his area was sweeping toward Lake Michigan out of control. He requested additional companies for the southeast side of his area. He reported water supply fair on the north from Evanston mains, but poor on the south and requested heavy duty equipment and quick response of off-duty men.

Protective Equipment Gets Workout at New York Drill
Firemen equipped with all-service masks carry out "rescue" operations at disaster drill in New York City. Scene of the demonstration was an accumulation of debris from buildings undergoing demolition.

7:26 a.m.—The Director at Primary Control asked for a report and instructed the Drillmaster to send as many companies as possible to the southeast side of the north blast area.

7:30 a.m.—All available forces, including 10 out-of-town companies in quarters north of Roosevelt Road were dispatched to the command post on the southeast side of the north blast area.

Simultaneously, all Calumet City, Hammond, Gary, East Chicago, and Whiting companies at Dispersal Station 14 were sent to report to the Chief of the Blue Island Fire Department on the south side of the south blast area. Members of the Retired Firemen's Pool who had been assigned to the out-of-town companies guided them to their indicated locations.

7:40 a.m.—The Communications Division had established field communications between the command posts at both bomb areas and that monitoring teams from the radiological section of the National Division were making contamination surveys.

7:50 a.m.—Trailer companies were reporting in service.

8:15 a.m.—Twenty-eight trailer companies now in service and responding to several box alarms in their various districts where they controlled incidental fires without further assistance.

8:45 a.m.—Chicago Police Radio reported Fireboats No. 37 and No. 41 working in the North Branch of the Chicago River between Diversey Parkway and Belmont Avenue, relaying water to land companies southeast of the north blast area. These boats were in good position and proving their value at short range.

Police Radio also reported that Fireboat No. 58 was working in the Calumet River, relaying water approximately one mile to companies at the south blast area.

9:00 a.m.—The Automotive Service Engineer reported that of the 34 engine companies, and 15 hook and ladders still missing, he could return more than half to duty within five of six hours with almost full replacement crews.

10:00 a.m.—Division Marshals had accounted for 58 engine companies and 10 hook and ladders which had been requested from out-of-town (mutual aid). These were being sent to the bomb areas or distributed to stand-by locations, as necessary, with retired firemen serving as guides.

10:00 a.m.-2:00 p.m.—Water supplies and traffic conditions were progressively improved and the department and mutual aid companies were operating at near normal efficiency.

2:00 p.m.—The Automotive Engineer reported that his division had made minor repairs on apparatus, thereby returning the following equipment in service: 24 engines, 12 trucks, two squads, 1 water tower, four ambulances, one high pressure wagon, one booster wagon, three battalion chief cars, one smoke ejector, one air compressor.

As these were made available they were sent to dispersal stations, direct to bomb areas, or to standby locations, as necessary. The Automotive Engineer further reported the fire department had lost 120 men killed and 200 injured. Also he reported that approximately 10 pumpers, three hook and ladders, one squad, two battalion chiefs, one ambulance, one light wagon and three jeeps were totally destroyed.

3:00 p.m.—The First Deputy reported that nearly all the off-duty men had now

(*Continued on page* 314)

Fire Service Ladders and Their Use—Part XI

Placement of Ladders (Ground, Straight and Extension, Beam and Truss, Wood and Metal).

By ROI B. WOOLLEY

This is Part XI in the series of chapters dealing with fire department ladders, ladder use and preventive maintenance. This chapter is devoted to the placement of ladders of all types with the exception of aerial ladders, which will be covered later (some elements of the placement of aerial ladders were included in the two installments of Part X in the February and March 1951 issues).

Previous chapters have covered these subjects: definition of ladders and glossary of terms; historical background of fire department ladders; ladder standards—types and their construction; ladder uses and limitations; ladder reach and capacities and marking of ladders; techniques of testing aerial and ground ladders (wood and metal aerial, and wood ground types), and general ideas on the use and abuse of aerial ladders.

As with most of the preceding installments, the basic information for this chapter has been gathered from many sources, including the voluminous files of this Journal, the opinions of manufacturers of fire department ladders, fire chiefs and fire department instructors and others.

In keeping with the promises made at the beginning of this series wherever and whenever there are conflicting ideas, opinions and procedures concerning any important phase of ladder design, construction use and maintenance, every effort will be made to present all sides of the subject. Readers are reminded, also, that the columns of FIRE ENGINEERING are open to them for presentation of any idea or suggestion they may care to offer that will contribute toward improving fire service ladders or their use and care.

BEFORE discussing the placement of portable ground ladders, it might be well to briefly review the types in use by the fire service, because there is no single type of ladder or standard of ladder construction and the different types call for different procedures in their handling and use.

There are two overall types of fire service ladders: the beam type and the truss type. The latter is constructed of two general kinds of materials, wood and metal.*

As has been pointed out wood truss type ladders, both straight and extension, are built in three designs:

1) With rungs carried in rung or spacer blocks between the upper and lower rails (these spacer blocks may be part of the rungs, or may be made apart from the rungs).

2) With rungs in the bottom rail.

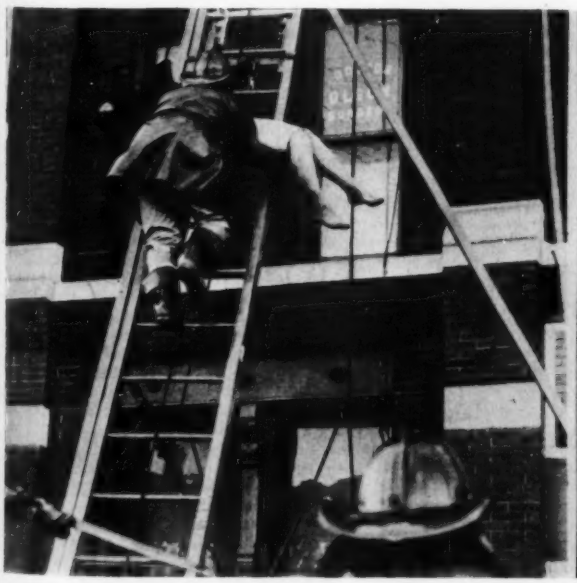
3) With rungs in the top rail.

Each of these designs has its proponents; each is in wide use by the fire service and apparently is giving satisfaction even though, as occasionally is found, the users are not adhering to the placement techniques recommended by the manufacturer and by some fire training schools, i.e., whether the truss should be above or below, (toward or away from the building) when erected, and whether the fly ladder of a truss extension ladder should be above or below the butt ladder (toward or away from the buildings) when the ladder is erected. These differences are discussed in greater detail later on.

Truss Under or Over for Straight Ladder

In 1937 *Fire Engineering* queried municipal fire chiefs from coast to coast on the question of placing trussed ladders in the effort to secure widescale opinions

*To the best of the author's knowledge, no beam or straight rail ladders made of metal are in general use by the fire service. Actually, the wood beam ladder, except in the smaller sizes such as in roof and short extension types, appears to be passing out of the picture.



Rescue Being Made on Beam Ladder

Minneapolis fireman removing woman victim at Tower Hotel fire in November, 1950, from fourth floor down a department's beam extension ladder. Note poles or "tormenters." It is the general practice in placing this type of beam ladders to set the fly out, or away from the building.

Firemen Venting Building on Trussed Ladder

Type of trussed straight ladder with rungs, in spacer-blocks, set slightly off center. Note "truss" section is under. This ladder can safely be used either way. In operations such as this, ladder should be carefully butted. New York City printing plant fire, March, 1947.

from which some comprehensive conclusions might be drawn.

Reports from municipalities in 28 states and the District of Columbia showed fire departments almost equally divided in their preference for placing truss ladders one way or another.

Although a number of departments indicated no preference for placement of the truss, it was disclosed that most of these used the type of ladders in which rungs are carried on spacer blocks and not in the rails.

However, even where the latter type ladders were used there was wide difference of opinion when it came to the reasons for setting these ladders with truss over, or under. The point most confused was that of safety, i.e., the greater measure of safety with truss above or below (out or in). Thus, while a number of chiefs claimed they placed the truss under because that is the way truss bridges are built, an equal number stated they placed the truss over for the same reason. Very few respondents, it was further disclosed, had a comprehensive understanding of what placement one way or another has to do with the factors of tension and compression.

Much the same difference apparently exists over the question of practicability and convenience. Proponents of the truss-over-type stress greater convenience in climbing, in stretching hose and making rescues. Advocates of the truss-under type, on the other hand, point to the ease with which hose can be thrown off the ladder, the absence of bolts (in some ladders the rail containing the rungs has countersunk bolt heads); and claim it is as convenient to climb as the truss-over-method of placement. Some claim, also, it is easier to "slide" ladders with the straight rail over or out.

The survey, while enlightening, failed to lead to a comprehensive conclusion. Nor did a review of the methods of ladder evolution and practice taught in the nation's fire schools and colleges come any nearer to providing a workable conclusion.

In this situation, the editors sought the opinion of authorities who assuredly ought to be able to shed light on the cloudy issue—the manufacturers of fire service ladders.

From the sum of information secured, the author offers this conclusive analysis:

Trussed ladders fall into two general classes or types, as we have said. Type 1 we will call those ladders which have their rungs embedded in one rail of each truss (it does not matter for the sake of this argument just how or where the rungs are fastened into the rail, although there is a considerable difference in the way in which the rungs are set in).

This type of ladder should be placed with the rails, in which the rungs are held, away from the wall, or over the truss.

The other type is that in which the rung is mounted in a spacer which, in turn, is bolted between the top and bottom rail of ladder, and both rails are of exactly the same cross section.

This type of ladder may properly be used with either side toward the building. This versatility is due to the fact that the upper and lower rails are the same dimensions and therefore can carry load interchangeably.

Although the manufacturers of this type of ladder make no implicit recommendations on how their ladders should be placed, it is noted that where the design of ladder Type 2 (rung set into spacer block slightly off center) is pictured in the manufacturers' announcements, the ladder is placed with the rail nearest the rungs at the bottom, or, below the center of the beam. Where the rung is in the exact center of the spacer block it may be placed either way.

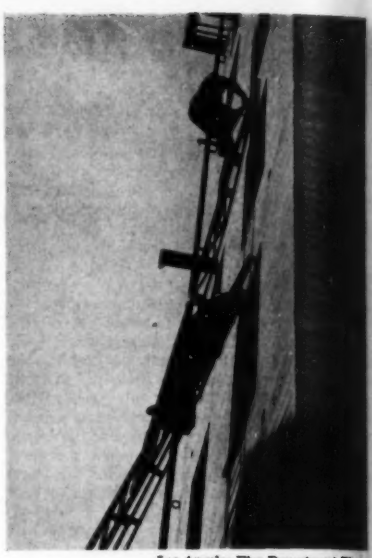
It will be noted, also, that in general, when illustrating the placement of their extension ladders if this type (rungs set in spacer blocks) the manufacturers almost invariably picture the fly ladder over, or away from the building. However, it is not the purpose of this Chapter to attempt to discuss this other controversial point at this time. The reference is only made to indicate that although manufacturers in this category do not implicitly advocate setting their ladders with the truss, or the fly ladder, under or over, they do picture their products with the truss, and the fly over or away from the building.

Commenting on this point, one manufacturer says: From the viewpoint of strength, the distance the rungs of the ladder are off center with respect to the top and bottom rail of the truss, is of no significance. The weight of anyone on the ladder acts vertically downward, but this downward force may be resolved into two component forces, one parallel to the ladder, which need not be considered, and one exactly at right angles to the ladder, which is the important one. It is because this component force is at right angles to the ladder that the distance and rungs are off center is of no import.

Photo by Ed Heavey

New York Firemen and Ladder, Taking Punishment in Multi-Alarm Fire

Showing trussed ladder with rungs in spacer blocks, and tip set into window. This illustrates the truth of the assertion that at times it is impossible to follow established placement formulas (with ladders too long or too short). When in this position such ladder should be well butted.



Los Angeles Fire Department Photo

Los Angeles Places Truss Under

Firemen at Los Angeles Training Tower extending 20-foot straight trussed ladder, above 30-foot straight ladder in one of department's evolutions. Note rungs set in top rails with truss placed under. This is a type ladder which should always be placed with truss below.

In the previously mentioned Type 2 ladder, there is no sacrifice of strength in either rail (so claims this correspondent to use his own words) due to the drilling of holes for rungs and since the top and bottom rail of each truss are equally strong, this type of ladder may be used with either side toward the wall. As pointed out by several chiefs who were questioned on the matter, actually it is usually desirable to use this type of ladder with the curved side out, for in this position the rungs are well back from the front of the ladder, and the trusses form a wall on either side of the ladder which will serve to prevent hose lines from working off the ladder, and add a feeling of security to the man using it.

In the Type 1 ladder the pair of rails in which the rungs are carried is made heavier to compensate for the strength lost by drilling of the ladder rung holes.

As a result, it is desirable in the Type 1 ladder that the pair carrying the rungs be so placed that when the ladder is in use they are in compression rather than in tension. This means that the rails carrying the rungs should be away from the wall or building. Manufacturers of this design ladder usually advise this procedure in their instructions furnished with their ladders, some even marking the ladder to insure that it be used correctly.

This should dispose of the question of truss over, or under.

Formula for Ladder Placement

The rule for placing ground ladders (trussed) is as follows:

The distance the base of the ladder should be placed away from the building is found by the simple formula: 1/5

Firemen Balked in Rescue Attempt

A Lawrence, Mass., fire fighter "takes a deal" as flames drive him down the trussed extension ladder used in futile attempt to save three members of a policeman's family (March, 1950). Note rungs n spacer blocks, and fly over or away from building. Tip appears properly placed for rescue operations.

the length of the ladder plus 2. For example, if a 35 ft. ladder were being placed against a building, and the ladder is of the trussed type, the distance the base should be set away from the building would be one-fifth of 35 or 7, plus 2, giving 9 feet.

The rule for the placement of plain, beam type ground ladders is as follows: The distance the base should be placed away from the building to give greatest strength is found by dividing the length of the ladder by 8. For example, if a 35 ft. solid side ladder were employed the base should be one-eighth of 35 or approximately 4½ ft. away from the building. This rule, however, results in placing the ladder in a position too nearly approaching the vertical, and makes climbing difficult. For that reason, the trussed ladder rule for placement is also commonly followed in setting the plain beam ladder.

In general, fire service ladders both the straight and extension type, should be placed against a building at an angle of approximately 60 deg. The practical, universal rule is to divide the length by five and add two for the distance that the butt should be placed from the building. Another formula, used by a number of departments, is to divide the ladder length by 4. Either formula is sufficiently accurate for all practical purposes. The conditions prevailing, must govern ladder use and placement and before setting a ladder, the officer in command should evaluate all conditions and circumstances under which any ladder must be placed.

Size-up Important in Setting Ladders

The purpose and the immediacy. Is the ladder urgently needed for rescue or is it intended for other purposes? If for rescue, and terrain and other conditions permit, how many men will be required to operate on or from it for the rescue, and how many persons must be removed via the ladder? Does the occasion call for a special type of evolution such as the "church," or the "factory" or "hotel" raise?

What are the obstacles and handicaps that must be overcome in raising and placing the ladder? The more important of those that may be encountered are: shortage of personnel; available ladder not suited to task (too long or too short); uneven footing; wires, trees, branches and other overhead obstructions; hedges, shrubs and ground planting; weather conditions (ice, rain, wind); limited space in which to operate; interference from pedestrian and vehicular traffic.

Locating the Tip, and Dogging Ladders

Placing the tip of the ladder is naturally dependent upon one or more of the conditions outlined in the foregoing. Assuming conditions are reasonably normal, some fire departments insist that a straight ladder should be placed to the extreme side of a window sill normally to the right (unless the wind is blowing smoke and flame to that side). This permits a man to make best use of his arms in getting off or on the ladder and in making a rescue; for example, it permits the use of a man's right hand, normally the stronger and more useful, to grasp the ladder and assist him in lifting the rescued person on to the ladder. Ladders should not be placed in the center of the window.

It is advisable to extend the tip of the ladder well beyond the sill of the window (or cornice) as it is then easier to step from and onto the ladder, particularly when carrying equipment or a rescued person. Where a window is narrow, the ladder should rest on the wall and not the sill, so that maximum space is left for working and for entering the premises.

Ladders should be placed with the heel (butt) resting evenly and maintained at right angles to the ground. When extension ladders are used, pawls should be locked, and on long extension ladders halyards should be properly secured.

It is not always necessary to secure or "dog" the head or tip or the base of a ladder except where (1) the heel is on uneven or insecure surface; (2) the ladder is left unattended for any length of time (particularly at night); or (3) when working from a ladder. Ladders should be "butted" at all times.

Ladders may be secured by (1) lashing with suitable rope or cord; anchored to a chimney or to a plaster hook or pike pole extended across the inside of a window or doorway; (2) by using a rope tool or belt; (3) by using the fire department chain with a ring and pin.

In setting ladders it is advisable to locate them away from building entrances or exits. When it is necessary to place them in such positions they should never be left unattended.

Photo Courtesy Hubert Walker

Seagrave Type of Trussed Ladders Are Set with Truss Under

Left: Seagrave trussed single ladder with rungs in top beam. This should always be placed with rungs on top. Right: Seagrave trussed two-section ladder. Rungs in the top beam fly section under butt section.

Eight Departments Operate on Industrial Fire

Damage estimated by Fire Chief George Barber at $100,000 was caused by fire which destroyed part of a business block on Main Street, Brewster, N. Y., near Danbury, Conn., on February 20. The three-story brick-veneer building housing an auto sales agency, a tavern, and a leather manufacturing firm, was burned out.

Chief Barber, in his investigation following the fire, said the fire apparently started from a static spark or spilled gasoline from a fuel truck unloading gasoline at the Brewster Garage. Philip Podkaminer, co-owner of the Studebaker agency, estimated loss to the garage at $40,000. He said 45 cars and trucks were in the garage when the fire started, and about 25 were damaged.

The Brewster Manufacturing Company, occupants of the second floor of the building, was gutted. The Company is an affiliate of the Acme Briefcase Company, of Patterson, N. Y., which was destroyed recently by a $500,000 fire.

Firemen were hampered by low pressure in the water mains, and water had to be pumped from a nearby river. Approximately 30 hose lines were concentrated on the building during the height of the fire. Fire companies from Carmel, Lake Carmel, Patterson, Pawling, Croton Falls, Golden Bridge and Katonah aided in fighting the fire. Three Companies from Danbury, Conn., were on the scene. They were Engine Company 1, and the Mill Plain and Miry Brook Volunteer Companies.

THOMAS F. MAGNER

Nyack Patrol Offers Fire Prevention Prize

To stimulate interest in fire prevention the Nyack Fire Patrol, Nyack, N. Y., has arranged to award a prize of $10 to the high school student who writes the best essay on fire prevention. The prize is given in honor of Capt. Sidney Albert Johnston the "godfather" of the patrol.

HOW TWO CITIES HANDLE THE PROBLEM OF ALERTING FIREMEN

Advent of Dial Phones Fails to Stump Firemen of Park Ridge and Des Plaines, Who Use Recorders

Editor's note: The article in the December, 1950, issue of *Fire Engineering* entitled "*New Fire Alerting System*," which described the method used by firemen of Rockville Centre, N. Y. to take alarms right to members of the volunteer department by 'carrier current' created widespread interest.

Now comes an equally interesting report of a system employed by two Illinois suburban communities, which grew out of the switch from manual to dial operated telephones in the area.

For the dsecription of this system, and the accompanying photographs, *Fire Engineering* is indebted to Wm. H. Paulson, Fireman and Chairman, Telephone and Fire Alarm Committee of the City of Park Ridge, Ill., Fire Department, which like many others is part paid and volunteer.

WHEN the Middle States Telephone Company of Illinois decided to change its Park Ridge and Des Plaines telephone systems from manual to automatic dial operation, one of the first problems to be considered was that of handling fire calls under the new system. The Cities of Park Ridge and Des Plaines are two suburban communities located immediately northwest of Chicago, having populations of approximately 16,500 and 15,000 respectively. Both cities have regular full-time and volunteer firemen and the problem of notifying the volunteers under the dial system tested the ingenuity of both the fire department and telephone company personnel.

Under the manual telephone system, the telephone office served as an information center for the volunteers who called the operator to get the location of the fire. With the introduction of dial telephone service, this practice would no longer be possible inasmuch as to report a fire, the calling party had to dial the fire department number direct, no telephone operator being in on the connection. Obviously, some method had to be devised to alert the firemen.

Main Fire Alarm Board at Park Ridge, Ill., Fire Station. Fireman Robert Calbow Is Shown at the Fire Location Announcer, Receiving a Call

Several meetings were held with representatives of both fire departments and the telephone company and while many different methods were discussed, none met all of the requirements. After leaving one of the meetings, S. H. Biery, District Manager of the telephone company, and W. H. Paulson, Chairman of the Park Ridge Fire Department Telephone and Fire Alarm Committee, stopped on the sidewalk outside the meeting place to discuss the situation further. It was here that Mr. Biery conceived the idea of using a recording machine that could be dialed by the volunteers and others to obtain the information they needed. The possibilities of the idea were explored and the suggested solution was then presented to Fire Chiefs N. A. Brown of Park Ridge and Walter Lagerhausen of Des Plaines for review. They were convinced it had many possibilities and recommended further studies.

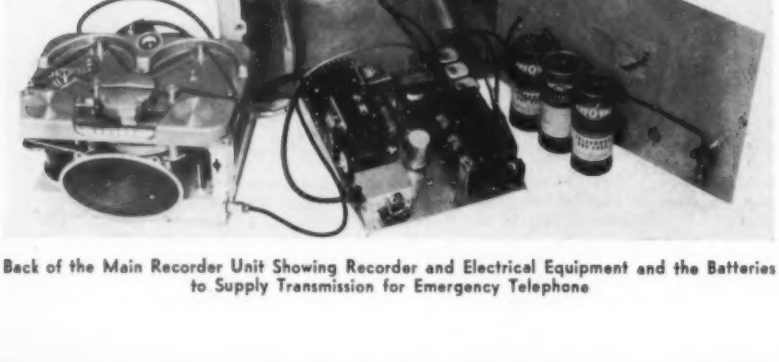
As a result, the engineering staff of Automatic Electric Company, manufacturer of the dial telephone equipment to be installed at Park Ridge and Des Plaines, were consulted. After reviewing the plan, they concluded that it might operate with the dial telephone system by making certain additions and modifications to the recording device.

A magnetic tape recorder with a continuous loop of tape that repeats a nine-second message was demonstrated before both fire departments, and it was agreed that this arrangement was quite satisfactory. The technical details were then developed by the Product Design Department of Automatic Electric Laboratories, out of which developed an efficient dial call system now known as Automatic Electric's "Automatic Information Announcer."

The next step in the development of this dial call proceeding was the connection of the recorder with the dial telephone system. This was accomplished by the installation of a ten-call telephone conference circuit, making it possible for firemen to dial a special three-digit code for immediate connection to the recorder.

Biery's "brain child" took shape and with the combined efforts of the fire departments, telephone company and the manufacturer, the equipment and necessary facilities were ready for service when the two telephone exchanges were cut over to dial operation. The Cities of Park Ridge and Des Plaines now boast one of the "most efficient and dependable fire call systems in service anywhere," to quote their fire forces. The complete operation is described as follows:

When a call is received at the fire station, whether by telephone, box alarm or in person, the fire department



Back of the Main Recorder Unit Showing Recorder and Electrical Equipment and the Batteries to Supply Transmission for Emergency Telephone

engineer on duty immediately flicks the "Main" switch on the recording machine to prepare it for operation (it normally requires 15 seconds to warm up the electronic tubes). Upon receiving the location of the fire or inhalator call, he moves the "Record" switch to the "Start" position and dictates the location, repeating it four times, into the microphone mounted at the upper right hand corner of the cabinet. This records the message on the magnetic tape which in effect is an endless loop, and is ready for the "play back" that occurs automatically after an elapse of approximately ten seconds. When the machine starts playing the message just recorded, it is heard over the loud speaker in the unit, which allows the operator to monitor what he has recorded.

The fireman on duty at the station then pulls an automatic switch, operating a set of bells located in each fireman's house and the fire house siren. Each bell and the siren are heard twice with a 25-second interval and then the signals are automatically shut off. The fireman, at home or elsewhere, upon hearing the bells or siren, goes to any nearby telephone, dials the special three-digit number which connects him over the conference circuit to the recorder and hears the location of the fire being continuously repeated. It requires a minimum of 9½ seconds to receive the message. The phone number called to receive the fire location is known only by firemen but, in case it becomes common property, it can easily be changed.

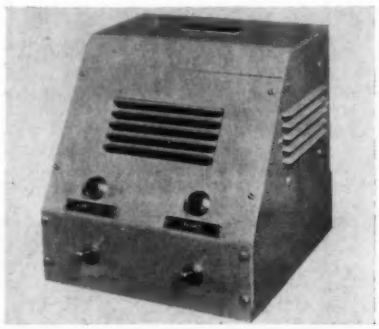
After recording the location and setting off the alarm signals, which is accomplished in approximately 30 seconds, the firemen at the fire station immediately proceed to the scene of the emergency. It is not necessary to wait at the station for other firemen or volunteers since they can obtain the location of the call by dialing and listening to the recording.

The conference circuit will handle ten calls simultaneously without giving a busy signal. Should a busy signal be received, the number can be re-dialed in five seconds. The connection is usually completed on the second attempt. The tape recorder runs its message continuously until it is shut off by the operator when he returns to the station.

A new message can be recorded at any time by momentarily pressing the "Record" switch to the "Start" position. This will wipe off the previously recorded message and make the tape ready to receive another message as dictated into the microphone. Also, the recording machine has dual controls and can be operated from two locations in the fire station. Facilities have also been provided to operate the recorder manually in the event of a failure in the commercial power supply. A local battery telephone handset is provided so that one of the firemen can talk directly over the conference circuit in place of the recorder sending out the message. Batteries are provided in the main unit for transmission purposes. The handset can also be used in case of multiple fire alarms.

Bells in Firemen's Homes

With the exception of the recording machine and its associated equipment located in the fire station, facilities of the telephone company are used to provide the signal bells in the firemen's homes and the conference circuit. Regular extension bells are installed by the telephone company at each designated location and connected through their cables to the exchange central office and the alarm board at the fire station. The equipment used in the conference circuit is also made available by the telephone company to provide ten simultaneous connections to the recorder from any regular local telephone.



Front of Auxiliary Recorder Unit for Dual Control of Main Units

The recorder described is a standard model made by the Revere Camera Co., modified to meet the above requirements. The tape moves at 3¾" per second, which is a standard slow speed, giving long life to the tape. New tapes can be made up at the fire station very easily and installed when required. Micro switch relays are used to carry power circuits and all other relays are enclosed so as to prevent trouble from dust and dirt.

The recorder unit is made so that it can be removed quite easily for servicing as well as the relay and timer unit which is mounted directly under the recorder unit. Plug type connectors are used to facilitate removal.

The recorder units were purchased by the cities at the established market price plus the cost of modification to provide the required features for connection with the telephone system. Maintenance work on the recorder units is performed by the respective cities. The equipment and facilities furnished and maintained by the telephone company are billed to the fire departments at regular rates for such equipment and facilities as authorized in the filed tariffs of the telephone company.

The fire and emergency call system described in this article has now been in operation at Park Ridge and Des Plaines since June of 1950 and has successfully met all requirements. It has received high praise from many sources because it provides one of the "fastest and most reliable systems in service anywhere" by which a fire department can so quickly summon the volunteers.

N.B.F.U. Considers War Damage Coverage

A special meeting of the membership of the National Board of Fire Underwriters was held recently at 85 John Street, New York City, to discuss the possible exclusion of atomic weapon damage from the fire insurance policy.

The basic question before the meeting was whether the exclusion should expressly refer to atomic weapons or whether more general language should be used.

It was the sense of the members that whatever exclusion is made should expressly refer to atomic weapons of war.

Eastern Plans Outstanding Conference

Preliminary plans for the annual conference of the Eastern Association of Fire Chiefs, to be held in Johnstown, Pa., May 24, 25 and 26, 1951, indicate one of the most outstanding meetings in the long history of this division of the International Association of Fire Chiefs.

Coming at a time when the fire service is concerned with protection of war defense production, and the problems of priorities in the delivery of apparatus and equipment, and of the part the fire forces play in the nation's civil defense picture, it is natural that the conference planners should shape their business and educational program to include discussion of these and related matters.

According to Eastern's President, Herbert A. Friede, an outstanding feature of the conference sessions will be the emphasis on new developments in electronics, which will be shown for the first time, innovations such as the alerting device to automatically turn on the fire department sirens, horns or whistles, and at the same time activate muted receivers in volunteer firemen's homes or ring a bell to awaken him, and give him the location of the alarm, thus further reducing the important time factor in volunteer fire department operations.

There will also be a demonstration of the latest fire fighting techniques, as developed by fire fighters like Chief Lloyd Layman of Parkersburg, W. Va., and other able instructors from state fire schools.

Top authorities will speak on questions of civil defense, not overlooking all-important communications. According to President Friede, new public air raid warning devices will be demonstrated.

Host Fire Chief, John A. Moran promises an interesting program of entertainment for the members, guests and their ladies, with prizes and other inducements to intrigue the visitors.

The Eastern being the home stamping grounds of Chief Rudolph Swanson, first vice-president of the International Association of Fire Chiefs, he will be on hand to report progress on the national fire service scene.

Special consideration is being given to the exhibits of the manufacturers of fire apparatus, equipment and communications facilities, this year. A dozen companies have already reserved exhibit space. President Friede points out that manufacturers who elect to conduct open air pumping or other demonstrations will find all facilities at their command.

Particulars about the coming conference can be had from President Herb. Friede, care District of Columbia, 201 Bryant St., N.W. Washington, D. C., or Secretary Charles E. Clark, Box 271, Wayne, Penna. Other officers of the Eastern Association are: Chief Joseph A. Giammatteo, Glen Echo, Md., first vice-president; Chief L. Ellis Wagner, York, Pa., second vice-president, and Chief George L. Mitchell, East Orange, N. J., treasurer.

VOLUNTEERS MAKE GOOD STOP AT "TAXPAYER" ROW FIRE

Delayed Alarm Permits Involvement of Two Buildings Before Arrival of Fire Department

By Richard M. Adelman

A fire of undetermined origin severely damaged a block of stores in Fair Lawn, New Jersey, on December 27, 1950. The one story building was 165 feet long and 70 to 75 feet deep. It was constructed only two years ago. The outer walls are constructed of cinder block and covered with cement. The roof and floors were wood on wood joists and rafters, supported by steel I-beams. Interior partitions and walls were wood and plaster board, coated with plaster. The only fire wall in the structure was a parapet separating the Grand Union Supermarket from the rest of the building. This wall stopped the fire at this point. The building had no other subdivisions and was not sprinklered.

Occupancies of the building, located on the corner of River Road and Hopper Avenue, were the Grand Union Supermarket at the extreme south end, not damaged; the Spencer Five and Ten Store, and the Schuttler Bakery, both destroyed; adjoining the bakery, the Centre Paint and Wallpaper Store, badly damaged by smoke and water, and two stores located in the north end of the building, slight smoke and water damage.

The fire apparently started in two separate places, the basement and main floor of the Spencer store. The basement fire was confined to that point, but the fire on the main floor spread to the area between the hanging ceiling and the roof. From here it traveled laterally to the front of the building and into the adjoining bakery. When the fire was discovered, it had vented itself, the front windows having been blown out and a portion of the roof had fallen in.

The exact time of the start of the fire is unknown; it was discovered after the front windows of the two stores involved had blown out. The fire department received the first alarm at 2:00 a.m. from a call box on the front of Fire Company No. 1's quarters, located only 100 feet away from the burning stores. Four engines, a city service truck and ambulance responded. At 2:05 a.m. a second alarm was sounded, bringing three pumpers and an ambulance from neighboring East Paterson. The Hawthorne Fire Department, under Chief Dominick Mele, had three engine companies and a ladder company ready to roll on a third alarm, but fortunately they were not needed.

Firemen were severely handicapped in their initial efforts to control the fire. The temperature was 5 degrees above zero when the fire started, and it dropped to 5 degrees below zero within the next two hours. Because of this, the streets, apparatus and men were quickly covered with sheets of ice. Ladders froze to the building, and rungs were covered with ice. One fireman was injured when he slipped and fell about ten feet while descending one. During the early stages of the fire, falling high tension electric lines and telephone cables, together with the extreme heat, prevented firemen from operating close to the front of the structure.

Part of the roof of the Spencer store collapsed before the arrival of the first due company. The frame wall between this store and the bakery also burned out rapidly, fully involving the latter store. Firemen using three 2½-inch lines made a good stop at the wall between the bakery and the paint store. One line each was operated from the front and rear of the building. The third line, equipped with a Bresnan cellar pipe, was taken over the roof and directed into the cockloft over the paint store. Two other 2½-inch lines were used in the Spencer store. A deluge set equipped with a fog nozzle was also used in this store.

Fair Lawn Fire as the First Two Lines Were Put Into Operation

The main body of the fire was brought under control in an hour and a half and the out of town companies returned to quarters. About 5:00 a.m., three Fair Lawn engine companies were sent back to quarters, while Company No. 1 (engine and ladder) continued to overhaul. At 7:00 a.m. Engine 4 was special called to pump some five feet of water from the basements. During overhauling, the department's smoke ejector was used, with good results, to clear the cellars of smoke and fumes. Overhauling continued until 2:00 p.m. when Company No. 1 returned to quarters.

Operations were as follows:

Fair Lawn

Engine No. 1 (first due)
Laid 1,000 feet 2½ inch hose, 300 feet 1½ inch hose. Operated deluge set, three 2½ inch lines, two 1½ inch lines. Pumped 5½ hours, operated 12 hours.

Engine Co. No. 2
Laid 500 feet 2½ inch hose, 200 feet 1½ inch hose. Operated one 2½ inch and one 1½ inch line. Four hours fire duty.

Photo courtesy Russell Sito

Falling Wires and Extreme Heat Kept Firemen from Operating Close to the Building During Early Stages of the Blaze. Fire Was Stopped Before It Entered the Paint Store at Right

Engine Co. No. 3
Laid 1,000 feet 2½ inch hose. Operated two 2½ inch lines. Pumped three hours. Four hours fire duty.

Engine Co. No. 4
Laid 800 feet 2½ inch hose. Operated two 2½ inch lines. Pumped eight hours. Nine hours fire duty.

Ladder No. 1
Raised 55 feet ladders. Operated floodlights and smoke ejector, overhauled. Twelve hours fire duty.

East Paterson

Company No. 1 covered Fair Lawn Station No. 3.
Company No. 2 covered Fair Lawn Station No. 1. Operated floodlight, supplied manpower.
Company No. 3 returned to quarters after responding.

Water supplies were ample. Water department records show that during the fire an average of 1,500 gpm were used. Damage to the building and contents is expected to reach $150,000. The cause of the fire is under investigation by the Fair Lawn Police and Fire Departments and by the National Board of Fire Underwriters.

Fair Lawn volunteers were commanded by Chief Robert Lindsay and Deputy Chief Arch Brown. East Paterson firemen were directed by Chief Martin Speckhart.

California Rural Firemen Association Holds Convention

The California Rural Fire Association convened in San Jose, Calif., April 13, 14 and 15 with a large and representative attendance. Fire fighters from Sonora, Columbia, Confidence, Twain Harte, Rodeo; Tahoe City, Auburn, Lake Tahoe, Hobart Mills, Grass Valley, Smartville, Colfax and Crockett and other areas were present. They were joined by fire officials from government, state, county, as well as fire commissioners, fire inspectors and firemen from lumber mills and yards, and the mines throughout Superior California.

The program included demonstrations of fire fighting methods, and the latest types apparatus and equipment. Radiological safety measures received consideration, also.

The City of San Jose, and the San Jose Fire Department, hosts to the convention, provided a special program of entertainment for the ladies of the convention.

VICTOR BARTLEY

February Fire Losses

Fires destroyed an estimated $69,136,000 in American property during February, an increase of 18.5 per cent over losses for the same month a year ago, it was announced today by Lewis A. Vincent, general manager of the National Board of Fire Underwriters.

The February total was also an increase of .7 per cent over that of the preceding month. January's losses this year were estimated at $68,686,000.

For the twelve months ending February 28, 1951 fire destruction amounted to an estimated $709,119,000. This represents an increase of $44,770,000 or 7 per cent over the fire loss total for the twelve months ending February 28, 1950.

The estimated losses under fire insurance policies include an allowance for uninsured and unreported losses.

SAN FRANCISCO'S BIG CITY HALL THREATENED BY LOFTY FIRE

Firemen Forced to Cut Through Copper Sheathing to Reach Hidden Blaze

A Staff Report

SAN FRANCISCO'S City Hall was threatened with major damage by fire on Feb. 16 when flames, started it is said by sparks from a coppersmith's acetylene torch, ignited the interior wooden supports of the copper dome sheath. Fast and effective work by firemen, however, held the damage to the dome at approximately $10,000.

The City Hall, dominant building of the city's Civic Center, is bounded by Van Ness avenue, Polk, McAllister and Grove streets. It was constructed, to replace the one destroyed by the fire and earthquake of April 18, 1906, at a cost of $3½ million. Construction was started in April, 1913, and the finished structure was dedicated in December, 1915.

The building, whose dome reaches 308 feet above ground, 16 ft. two and five-eights inches higher than the dome of the national capitol in Washington, has been the scene of welcome for scores of visiting celebrities. Members of the International Association of Fire Chiefs, in convention in San Francisco last fall, admired its massive beauty. The dome, 112 feet in diameter, covers the galleries to the successive floors. At the time the fire was discovered, at about 2:00 P.M., several hundred municipal employes were at work in the structure, which houses also the offices of the mayor and other civic authorities and is the headquarters of Fire Chief Edward P. Walsh. The Chief was in his office in the basement when the first alarm was received and took personal charge of the battle to control the fire.

The first alarm was received at 2:00 P.M., and this was followed by a second alarm at 2:28 P.M., bringing a large assignment of apparatus and fire fighters who were confronted with a difficult situation.

The fire, starting where the coppersmith was repairing a copper gutter on the dome, spread in the combustible supports and sheathing, giving off heavy smoke and bringing thousands of spectators to the scene. Fire apparatus and traffic jammed into Polk street, closing the main entrance to the building. Hundreds of employes, made aware of the fire as firemen arrived and carried their equipment into the structure and attempted to locate the heart of the fire, abandoned their desks to crowd the rotunda as spectators.

Before these interior and exterior audiences, fire fighters put on a dramatic show, that was applauded by Mayor Robinson and other city officials who watched events from a Polk street balcony.

It was necessary for firemen to attack the fire both from the inside and exterior. Coils of hose, and equipment were taken by elevator as high up in the structure as possible, from which point the men lugged their heavy burdens on their backs. Short ladders were also taken up through the interior to bridge balconies and reach otherwise inaccessible spaces.

Several firemen climbed to the highest pinnacle of the dome. Life lines were tied around them and they were lowered through the smoke into the

Photo Courtesy San Francisco Chronicle

San Francisco Firemen Become Human Flies to Combat Lofty City Hall Blaze
Secured by safety ropes, fire fighters cut through copper sheathed dome of historic City Hall to attack stubborn, smoky fire involving combustible supports. Note men have removed helmets as they operate tools and small hose lines.

sheathing of the dome and the outside copper covering. Fellow firemen attempted to climb the narrow spiral staircase that leads from the fourth floor to the dome, the only direct approach to that part of the dome interior. The operation involved plenty of physical punishment and some men were forced to operate in short shifts within the smoke filled area. Firemen, bowed under the weight of heavy equipment at times were forced to hang over the side of the narrow staircase to permit downward passage of other fire fighters.

The more spectacular operation involved the attempts to get at the concealed blaze from the exterior of the huge dome. In this detail, firemen, securely lashed to life lines fastened above and manipulated by their fellow firemen above them, were lowered or slid down the slanting surface of the copper roofing from which point they wielded axes and forcible entry tools to cut through and strip back the metal and get streams of water into the interior fire. In this they were successful.

At the rotunda level, salvage covers were spread above the valuable Tax Collectors record files to protect them from water damage. The rain-drain gutters on the roof, however, reportedly carried most of the water away with little damage to the interior of the building.

Men operating on the roof of the dome were little more than specks to the gaping crowd on the street—tiny figures that at times were lost in the smudge and plumes of smoke. These men shed their helmets and, in some cases, even their turnout coats as they labored with tools.

It was a slow, painstaking cutting and probing job, applying water through small lines only when 'hot spots' were located. Fortunately, no serious injuries to personnel were reported.

HEAVY FIRE LOSS RESULTS FROM CLOSED SPRINKLER SYSTEM VALVE

Shoddy Mill Almost a Complete Loss When Workmen Close Valve After Small Blaze was Believed Extinguished

By Henry T. Hanson

ON February 24, 1951, the century-old plant of the Acton Woolen Co. in South Acton, Mass., was almost completely destroyed by a $125,000 fire. Although the exact cause of the fire could not be determined, because of the extent of the fire when discovered, it is believed that a small fire, about nine hours earlier, had flared up anew.

At the time of the first fire, only two men were working in the plant. A slight fire had started in a stock bin and two sprinkler heads had opened and apparently had extinguished the fire. The two workmen did not think it necessary to call the fire department, so they obtained two replacement sprinkler heads, and not being familiar with the valves of the system, one of them went out into the yard and closed the post indicator valve, shutting off the main line from the town water supply. He then replaced the sprinkler heads and told the other workman to go out in the yard and turn the water back on. This man mistook the yard hydrant for the post indicator valve and opened the hydrant instead, which merely let the water up into the hydrant barrel. The two men then remained in the plant watching the stock pile, which continued to smoulder for some time, until about 5:00 A.M., when they decided that there was no more danger and left for home, not realizing that the water was still shut off from the sprinkler system.

At 7:15 the first man reporting for work on the day shift found the whole main building a mass of flames. Due to a heavy, driving snow storm, the fire had gone unnoticed by persons at a distance. The workman ran about 300 yards to the nearest house and phoned the alarm.

The town of Acton has a modern fire alarm system, with air whistles on each of its three stations which sound simultaneously either from the street boxes or a transmitter in the local telephone exchange. The fire department is all volunteer, considered very efficient and well equipped for a town of 2700 population. Response was prompt, with three 500 G.P.M. engines, a 500 gal. tanker, a special service squad and a ladder truck.

The plant involved was an old rambling wooden frame building covering an area of about 16,000 square feet, most of it two and three stories high. The building had been altered and added to a great many times over the years and had no fire walls. Stair and elevator wells were all open, which allowed the fire to race through the whole structure unhindered. The only reason that the plant had survived the countless number of small fires through the years was the excellent sprinkler system, which was supplied by an eight inch loop on the town water system, on which was maintained a pressure of 115 P.S.I.

Only a short time before the fire, Chief MacGregor had suggested to the owners that they have the sprinkler alarm hooked up to the town fire alarm, in order to automatically sound an outside alarm whenever the sprinklers operated. The owners were receptive to the suggestion, but as they had only recently purchased the property they were busily engaged in installing new machinery to increase their production, and hence put off the project which might have saved their plant.

Concord and Maynard Firemen Aid

Immediately upon arrival at the fire, Chief MacGregor, utilizing the radio in the police car, which had responded to the alarm, called for aid from the neighboring towns of Concord and Maynard. Concord dispatched an engine company to cover in at one of Acton's stations, Maynard sent a 600 G.P.M. engine and an aerial truck, both of which worked at the fire. The aerial, using a ladder pipe, proved effective in helping cut off the fire from the boiler room section of the mill.

Four lines were worked directly from the town hydrants and six more lines were taken from three engines drafting from the mill pond. Operations were hampered by the fact that two sides of the mill were built over water, making them inaccessable. There was, during the fire, a strong northwest wind blowing, which made a blizzard of the snowstorm.

Along with the office and boiler room section, firemen were able to save several storage sheds that were within a few feet of the main building.

View of Ruins, Showing Tangled Wreckage of Machinery. In Foreground May Be Seen Drums Which Contained Wool Oil and Which Added to Intensity of the Fire. Boiler Room, Office and Shipping Room, Which Were Saved, Shown at Right Rear

Figure 1

Figure 2

Manhattan Firemen Make Dramatic Rescues

Mrs. Saungs Wong, 38, and her children, William, 5, and Niajan, 4, will not soon forget last February 6th, their Chinese New Year, and the New York Fire Department, particularly the members of Ladder 6 and 1.

The story is quickly told. Mrs. Wong and her offspring were visiting the home of Mr. and Mrs. Lee Foo, 33-37 Mott street, in New York's famed Chinatown, to witness the dragon parade, highlight of the Chinese anniversary, passing by a short distance from the apartment. Mrs. Foo and her children were watching from fire escape outside a bedroom window, trying to pick out Mr. Foo, who was one of the paraders. Mrs. Wong and her brood were watching from the living room window of the apartment, when fire broke out in that room about 1:20 P.M.

It is not related what caused the blaze which filled the apartment with choking smoke and resulted in street fire alarm box 154 at Mott and Pell streets being snapped at 1:22 P.M.

Fire alarms from that neighborhood bring a normally heavy response, and in a matter of moments members of Engines 9, 12, 31 and 55 and ladders 6 and 1, with chiefs of the 1st and 4th battalions and the head of the first division, were competing with the parade for interest.

As the smoke rolled out, the Foos made their way down the fire escape from the 5th floor apartment, but Mrs. Wong and her children found their way cut off and climbed on the window ledge which was protected by a grill to prevent an accidental fall. Here they huddled, at times lost to excited spectators below, in the smoke. In the midst of it all, however, Mrs. Wong kept her head and awaited the blue-shirted rescuers, whose names are legion in that thickly populated area.

In no time at all, two aerial ladders were against the building, converged on the tiny balcony, and the crews were picking off the near-victims.

The sequences of this rescue are graphically told in the three accompanying photographs, made by a newspaper photographer who was on hand to "shoot" the parade. Figure 1 shows Mrs. Wong attempting to comfort her terror stricken children as laddermen hurry up the extended aerial toward them.

Figure 2 shows the second aerial up, with one of the crew perched on its very tip, leg through the rungs, taking one of the youngsters from Mrs. Wong, while members of the other Company prepare to lend their helping hands.

The final shot (Figure 3) shows the officers lifting Mrs. Wong over the railing as (right and left) crew members carry down youngsters, no longer fearful. Other tenants of the apartment may be seen on the top landing debating whether or not to risk the descent past the smoke-filled window.

Florida Fire College Sessions Begin May 7, 1951

The weekly Fire College sessions of the recently organized Florida State Fire College get under way at Ocala, Fla., in May, with three definite courses of training scheduled. These are "Basic," "Advanced" and "Special." Certificates will be issued enrollees upon the completion of each unit of training, and a diploma will be awarded all those who complete the basic or advanced courses.

The courses each cover 30 hours of instruction. Basic has six units each covering 30 hours. Advanced has three courses. The Special Course includes arson investigation and detection, principles of science and electricity applied to the fire service and fire department instructors training. A separate course of training is offered volunteer firemen, to include a part of each of the six units of the basic course in fire service training. This course is entitled "Field Practices." Arrangements have been made to quarter those taking the course, in local hotels and motor courts.

Officers of the Fire College are listed as Superintendent, Henry Chase; Trustees, W. H. Barnett, Neptune Beach, Chairman; T. S. Sexton, Fire Headquarters, Ocala, and Earl Levy, Fire Headquarters, Tallahassee.

Property Owners Liable for Injury to Firemen

A new bill in the Minnesota Senate would make owners or occupiers of business property liable for injuries or death suffered by a fireman or policeman in case of violation of safety rules.

Figure 3

Many Firemen Participate at Butadiene Fire

An explosion touched off a $500,000 fire in a unit of the war-vital government chemical plant operated by Koppers Company, Inc., at Kobuta, Penn., near Monaca on March 6, 1951. The vast plant produces butadiene, one of the components of synthetic rubber.

The unit, according to the company, which operates the plant for the government, was wrecked. Built during World War II, it cost somewhere between $5 and $10 million.

Investigations by the Federal Bureau of Investigation and State Police into the cause of the explosion were begun at once.

More than 200 firemen from 20 communities fought the fire. Included in the large force, were two engine companies from Pittsburgh, in charge of Fire Chief William H. Davis and Deputy Chief William Martin.

The initial explosion occurred about 7:00 A.M. in the butadiene unit, the roar being heard as far away as McCleary, about two miles. Flames shot high in the air as plant fire brigade members hurried into action.

These firemen quickly saw that there was no chance of controlling the blaze without help, and fire companies were called from Monaca, Rochester and other places within 10 miles.

Despite efforts of the mounting crews of fire fighters, the blaze spread to two huge tanks of 190-proof alcohol and as further extension appeared inevitable, additional help was called from Pittsburgh and Aliquippa. An appeal for help from any volunteer fire company "within reach" was broadcast by the Beaver Falls radio station WBVP. This brought more firemen and equipment to the scene.

The unit of the plant involved by the fire is one of four butadiene lines of the plant, which is located in a sparsely-settled area at a bend of the Ohio River, 8 miles southwest of Monaca.

The plant was built by Koppers for the government and after World War II the company bought part of the installation but the government retained the butadiene-producing parts, consisting of four units.

Each unit consists of a two-story brick building, 200 x 50 ft., with a cluster of tanks outside. The buildings are about 100 ft. apart. The blaze apparently centered in the tanks outside No. 3 unit, which stand slightly away from the south side of the building. The tanks include about 25 steel cylinders, approximately 75 feet high, containing butadiene.

Next to the 75-foot tanks, and nearer the building, are 13 other tanks comprising a continuous still. Firemen, who employed heavy streams to cool down all exposures, were successful in confining the blaze to the "still" tanks. In this they were aided by a series of safety valves and other safety devices, including an excellent sprinkler system. The plant's giant pumping system also materially helped fire fighters by providing thousands of gallons of river water which were pumped onto exposed tanks.

The blaze was not considered under control until shortly after noon. At that time only a 600-gallon still was involved and this was allowed to burn itself out.

Butadiene. when ignited, makes a difficult fire to control. Extinguishment is almost impossible by normal means i.e.: water and water fog. Certain chemicals notably dry powder, are employed successfully on fires of this category, of less magnitude than this. In cases where the blaze is of considerable magnitude, about all that can be done is to protect exposures and confine the fire to the smallest possible area, letting it burn itself out.

Firemen employed chemicals at different stages of the fire but the heat and danger of explosions kept them at too great a distance to operate effectively on the blaze itself. Meanwhile, every form of water stream and sprinklers, were used to cool down the area and exposed property. The stills, tanks, pipes and other equipment of the burned unit were twisted into fantastic shapes by the heat.

The blast occurred shortly before workmen were to report for the 8:00 A.M. shift at the plant, which employs 1000 men. All personnel were halted at the gates and only about 10 per cent, in necessary or comparatively safe jobs, were finally admitted. The Koppers Co. styrene plant, which it owns, is located nearby and it was at first feared both plants might become involved by the explosions. The latter was in no serious danger, however.

No firemen were seriously injured, but two Koppers' employees were hospitalized with second degree burns. One of these workers attributed the first blast to a leak in a pump. He said the packing broke loose, and the pressure pushed out butadiene gas which burst into flames.

Firemen of Many Communities Confine Threatening Butadiene Fire
A unit of the Koppers-Operated Kobuta Rubber plant was wrecked with loss of $500,000 in a spectacular fire fought by plant brigade aided by 200 firemen from 20 communities, including Pittsburgh. Here heavy streams cool exposures. Note sprinklers in operation over stills at left.

Hopalong Cassidy Joins I.A.F.C. Drive to Cut Deaths by Fire

The energetic and resourceful Chief Jay Stevens, Executive Secretary of the International Association of Fire Chiefs who, with the aid and blessing of the National Board of Fire Underwriters, has decided something ought to be done about reducing the high mortality among children of the nation from fire, took his planned fire safety program to the Houston, Tex., annual meeting of the I.A.F.C. Board of Directors. Here the indefatigable Jay encountered one William Boyd (better known as Hopalong Cassidy) and before the latter knew it, he had agreed to tie in his nationwide radio program with that of the fire chiefs.

International President Chief John H. Alderson with Hopalong Cassidy and Some of His Many Admirers

Every family that possesses children knows what a power for good Hopalong is among the latter. Hence the Willingness of this star performer to appeal to the parents of the country to use every precaution against fire, for the sake of their children, and themselves, gets the fire chiefs' "Save the Children From Fire" drive off to a good start.

In addition, the ubiquitous Hopalong devoted one of his pungent syndicated printed "Hoppy Talks" (King Features Syndicate) to the International's meritorious move. "These men know their business when it comes to fire fighting," he told his readers. "When they get together they don't waste much time talking about that part of their job. They talk about ways of teaching people to save their children, and themselves, by following fire prevention and safety rules. If folks paid more attention to them, the chiefs and their firemen would cut that death toll (an average of 20 kids

A Survivor of a National Airlines Plane Wreck, at International Airport, Philadelphia, Pa., Climbs from the Ditch Seconds After the Blazing Plane Came to a Stop on a Road Adjoining the Airport. Another Person Is Dimly Visible in the Doorway of the Plane's Cabin, as Fire, Fed by Gasoline, Spreads from the Front of the Ship

lives lost every night, according to Jay Stevens) in a hurry."

Just to 'dress up' the safety program, Hopalong introduced the president of the International Association of Fire Chiefs, Chief John H. Alderson, of Los Angeles, to one of his "Hopalong Broods". "These are the sort of youngsters we fire chiefs want to see grow up into strong, healthy, useful citizens rather than be cut down by fire in their youth," said Jay. "Anything the fire service can do to insure that happy outcome augurs well for the future of our nation."

Stewardess Heroine in Crash

Five women and two babies were killed and 21 persons were injured in the crash of a National Airlines C-4 at the Philadelphia Airport on January 14. The toll would have been much greater except for the heroism of the plane's stewardess, Mary Frances Housley, 24, who perished when she returned to rescue passengers after getting at least ten persons out of the burning plane.

Arriving at the airport en route to Norfolk, Va., the 4-engined skyliner apparently was unable to stop on the icy strip at 2:13 p.m. and ran off the east end of the runway, across 200 feet of turf and into a seven foot cyclone fence in a drainage ditch at the south east corner of the airport, where it came to a crashing stop and burst into flames.

The burning plane rested partly across Island road straddling the ditch.

When the plane crashed, the tower sounded the alarm siren and crash equipment raced for the scene but was unable to get near the plane and had to return to a gate to get to Island road. Meantime city fire fighters, responding to the alarm, quickly reached the spot and strung hose lines from the nearest hydrant, about a mile distance from an Island road and Passyunk avenue.

Crash fire crews and city firemen, however, were unable to reach the trapped persons in the plane. Those who escaped, in addition to the crew which reached safety from the pilot's compartment, did so by way of the exit located directly over the ditch. It meant a drop of some feet for the passengers and it is believed some of those who were lost hesitated too long before making the jump.

Stewardess Housley, after the crash remained at her post, calming the passengers. She could have saved herself by jumping but took the time to lead out her charges. Then, as flames reached to the exit, she heard a mother call and returned in an effort to save the woman and her child. All three became victims.

The crash and municipal crews used water fog, high pressure streams and foam in the struggle to extinguish the raging fire, but although it was controlled in 25 minutes, it was impossible to save any more of the passengers.

Firemen were seriously hampered in their work by the arriving thousands of persons in vehicles who rushed to see the wreck. City and state police had difficulty in clearing the way for emergency vehicles.

The plane, reportedly valued at $1,000,000, left Newark Airport at only a few minutes before the scheduled landing at Philadelphia. Investigations, conducted following the crash by seven different authorities, disclosed that the plane had made a perfect landing on the mile-long runway, but too near the center, with the result that it overshot the concrete.

Witnesses, who were nearly struck by the craft, said fire broke out within seconds of its coming to a stop, and the cabin was enveloped in less than three minutes.

Volunteer Firemen Lead Rescue Work at Fatal Jersey Railroad Wreck

When the Pennsylvania Railroad's commuter train, "The Broker," cracked up at Woodbridge, N. J., on February 6th, 1951, killing 84 and injuring nearly 500, volunteer firemen of New Jersey spearheaded the rescue effort.

This, the third catastrophe involving commuting trains in the New York area within the year, forcibly attested the truism that the first emergency service to arrive at the scene of a major disaster ready to go to work with the trained men and equipment is the fire service.

Within moments after "The Broker" rolled over on its side, spilling torn humanity in all directions, and crushing untold others in the wreckage, local firemen were on the scene, followed all through the night by rescue, emergency, ambulance and fire units from throughout Monmouth and Middlesex Counties.

It was the South Amboy disaster over again, in different guise, perhaps, but nonetheless terrible. But this time there was less confusion in the response and the direction of the aiding forces. This time, again, the fire forces measured up and bore the brunt of the rescue effort.

Twenty-one minutes after the crackup, Perth Amboy General Hospital was already putting victims of the crackup in bed, injuries having been checked and receiving at least emergency treatment. Most of those victims were pulled from

(*Continued on page* 298)

Volunteer Firemen Lead Rescue Operations at Woodbridge Disaster

Over 1,000 persons aboard the Pennsylvania Railroad's crack commuter train, the Broker, met disaster on February 6th, resulting in death to 84 and injuries to nearly 500. Volunteer firemen and rescue workers from a wide area saved many lives by fast, efficient operations, such as shown here. Note use of aerial and ground ladders of all types, and life lines, to reach the wrecked cars on a mud embankment. Picture was taken before entire wreck area was illuminated by emergency lights.

Short Cuts and Gadgets

IMPROVISED TRAFFIC SIGNAL

Back in 1930 when Daniel B. Tierney was Chief, the Arlington, Mass., Fire Department was called on to fight a serious fire in a large ice house. There were traffic problems in those days just as there are now and, when this blaze lighted up the sky, everybody and their brother jumped into their motor cars and headed for the scene, jamming up traffic and complicating the work of firemen from Arlington and other communities responding to the alarms.

Determined to prevent a recurrence of the traffic congestion, Chief Tierney improvised a simple street signal standard which was carried on his Fire Department Service Truck.

The 'gadget' consists of a simple pipe standard fastened to a weighted base. The standard bears the word "STOP" painted in yellow on a black background (we have seen somewhat similar standards with the word spelled out in reflector buttons). The rod from the sign fits into the base in such wise that the sign can be set at any desired height by means of a set-screw.

Provision is made in the base to insert a railroad signal flare. This type of light is provided with a friction cap and requires no matches to start it. Once started these flares burn for about thirty minutes and may be seen from a considerable distance.

The Service Truck carries the standard as regular equipment and it is used whenever it is necessary to hold back traffic until a regular police line can be established.

* * *

COMBINATION HOSE AND LIFE BELT USED ON PACIFIC COAST

In one of the first issues of "Short Cuts and Gadgets" we described a utility belt used by the San Francisco Fire Department. One of our editors saw this at the San Francisco drill tower and later, at fires and was impressed by its wide range of uses. At that time it was believed that this belt was something new to the fire service.

Since that time we have learned that somewhat similar belts have been in use by the Portland, Oregon, and other Pacific Coast departments for many years. The knowledge was imparted by one of our "constant readers" who tells us—not without a sense of sardonic humor, that FIRE ENGINEERING, 'way back in 1927 told the story of the Portland belt and checking back we find that old "Constant Reader" is correct. And so, with apologies to Portland, and the other western fire forces that have been calling this type of belt "standard equipment" we re-tell our account of January 26, 1927.

The belt, pictured herein, was invented by Lieutenant Sherk, a member of the Portland, Oregon, Fire Department. Its advantages were quickly recognized and adopted by Pacific Coast firemen, and it received the endorsement of the Oregon Fire Chiefs' Association. It was, at that time, manufactured by a Chicago belting company.

The belt can be used, among other ways, to facilitate the handling of high pressure hose lines. Its use relieves the arms of the pressure of the charged line and distributes it to the shoulders and body of the fireman holding the hose. When the outfit was tested, two men wearing the belt handled streams of 275 and 300 PSI pressure without any undue strain.

At a demonstration, staged by members of the Portland Fire Department to enlist the public's interest in and approval of an increase in salary, a Portland fireman carried a limp comrade strapped to his back by means of the belt from the top of a fifteen story building to an aerial ladder. The descent was made by way of a vertical outside ladder escape. More than 20,000 persons jammed the streets while they watched this unusual demonstration, it is related.

The "Sherk" belt (as it was called) can also be used to lift hose up to a desired floor or as an aid to firemen in carrying lines up ladders. When used to carry hose, the belt throws the weight of the line on the shoulders and leaves the arms and legs free.

As an auxiliary to the device, Lieutenant Sherk patented an axe belt which supports the axe from the shoulder instead of the waist line (many fire departments instruct their laddermen to carry axes in some form of belt.)

* * *

The Old Timer Says—

Always obey the LAST order received from a superior officer; if it should be wrong, the officer issuing the order is responsible.

Illustrating Some of the Varied Uses of the "Sherk" Belt, Used on the Pacific Coast

1—The mock rescue staged by the Portland, Ore., Fire Department. Note how arms of the rescuer are left free and how victim is strapped securely. 2—Strapping a nozzle so that two men are able to handle a high pressure line with ease (we doubt if Portland firemen are now using the type nozzle pictured). 3—The belt may be used to carry up hose, pike pole or extinguisher as shown. 4—How a fireman carries a fire victim down a fire escape to safety with the aid of the belt. 5—Hose may be carried up ladders with ease by using the belt slung over the fireman's shoulder. 6—Comparison of the old and new method of carrying a fire axe. The belt brings the weight of the axe to the shoulder and the guards prevent possible injury; the old way is shown at the right and pictures how a fireman may receive a severe cut from the sharp edge of the blade.

The WATCH DESK

Overhauling the firemanic news of the day

by ROI B. WOOLLEY

Blind Man Gropes Way to Safety

In Los Angeles, Blind Joe Farley, 65, was caught in an apartment house fire the night of March 16th, last. With the instinct of the blind he groped his way alone through dense smoke to freedom, while scores of other persons were having difficulty effecting their escape.

Mr. Farley's Seeing-Eye dog, "Betty" wasn't around to help him in the crisis. Her harness in his hand, Farley called out again and again for her, but she failed to answer.

Soon firemen brought out the dog, overcome by smoke and unconscious. Farley, when told about his dog wept, but soon grief changed to joy.

Inspector Joseph Von Slomski, of the Ann Street Animal Shelter, had stopped to see the fire. With the aid of a receiving hospital rescue unit he went to work on Betty, using artificial respiration and oxygen. Soon the dog wagged her tail, got to her feet and went to Mr. Farley's side.

* * *

Hot Off the Tape

The vamps of the Rye, N. Y., Fire Department were scheduled to play host to the Westchester County Fire Chiefs' Emergency Plan. As the piéce de resistance for the estimated 200 visiting firemen, the main course was to be N. E. clam chowder—buckets of it. To do it right, the Rye recipe calls for hours n' hours of slow cooking. Well, right in the midst of the culinary preparation, with full wash boilers on the fire, another sort of fire called out all the lads. At the height of the fight to save a $65,000 house which, incidentally, couldn't be saved due to lack of water, somebody suddenly bethought himself of the chowder stewing, and simmering back at headquarters. Near consternation reined! A "kitchen" detail was dispatched on a "still" alarm, to man the spoons and ladles! PS—the meeting of March 21 went off with a bang! Not a scorched clam in a **soupcon!** (Thanks, Chief Benson). . . . Woodbridge, N. J., scene of the Pennsylvania Railroad wreck that claimed 84 lives, had a $100,000 fire that wrecked 11 one-story, brick fronted stores (Taxpayers to you). . . . In Amarillo, Tex., a wealthy spinster died when she was unable to escape from a fire in her house because a kitchen door was jammed by loads of old papers and fruit jars. Assistant Chief Dewey Morris, who broke down the door and carried the victim out, reported trash and stuff were stacked in the house from front to back door. The dead woman, Miss Inez Sweeney, believed about 75, had not been outside in more than 15 years and lived alone. She left an estate estimated at $75,000. . . . Members of the Garwood, N. J., Volunteer Fire Department want relaxation when they return to their quarters after battling blazes, Fire Chief Thomas Britton told the borough council in requesting chairs for the men. "When firemen come back to their quarters from a fire, they are tired and want to relax," he said. "There are no chairs in their quarters and the men have to sit on the running board of the fire truck. This is not conducive to proper relaxation." We agree, Chief—and how about a TV set, while the council's doing it! . . . One driver was burned to death, another injured, when two big trailer trucks collided and burst into flames on an icy stretch of Route 9 near Red Hook, N. J. The fire also destroyed overhead telephone and power lines, cutting service in northern Dutchess County. . . . Bodies of two men were found in a burning refrigerator car in the U. P. switch yards in Denver, Colo. Two hours later a contractor, of nearby Littleton, died when a partly completed house burned, bringing the toll of deaths between Saturday, Feb. 16th and 20th for the area to nine (Thanks, R. H. Davidson). . . . The driver of a large gasoline tanker was pulled from the wreck of his burning truck with minor injuries, following a collision with a passenger car, in the burned ruins of which one body was found. Two others in the car were critically injured. Spectators who crowded around the wreck were sprayed by burning gasoline when the tank let go! . . . About eighteen hours before, 400 CIO steelworkers ratified a wage contract in March, fire damaged a large portion of the U. S. Hoffman Machinery Corp.'s Greenway ave. warehouse in Syracuse, N. Y., in a 3-3 alarm fire. . . . In still another trailer-tractor truck fire a driver, believed to have fallen asleep at the wheel of his machine, was burned to death when the vehicle got out of control rounding a curve at Hop Bottom, Susquehanna County, Pa., struck a bridge abutment and burst into flames. . . . In Memphis, a terrified but courageous mother, Mrs. Phillip Nunnery, 33, died from burns after making three trips into her flaming house to rescue her children. She safely removed three children, age 3, eighteen months and one month, and returned for two others. She was found dead in the ruins, holding the body of another child, 8, with a son, 11, dead nearby.

* * *

Ladies and Gentlemen:—The THING!!!

Citizens of White Plains, in New York's ritzy Westchester County, were surprised and considerably puzzled recently to see what appeared to be a weird and wonderful "Rube Goldberg" chugging its way through some of the downtown streets. Perched on the driver's seat was a khaki clad fireman, eyes glued to the road. Hanging with equal frenzy to the tiller wheel, aft, and seated high above the driver, was another khaki clad fireman who likewise looked neither to right nor left and whose uniform cap also was pulled low over his eyes.

The good townsfolk gaped as the whatyoumaycallit hiccuped and coughed its way down the street toward the Police garage. As it turned onto Mamaroneck Ave., at the main fire headquarters, the crews of the several companies on duty rushed outside. What they said and yelled to the red faced crew of the whatyoumaycallit is of necessity censored.

With a final hiccup and gasp, the whoziz - on - the - whatsis reached the garage, followed by a growing procession of small boys and wondering townspeople. There photographers caught up with it before its embarrassed and harassed crew could get it under wraps. And there they snapped it—but sans its chagrined chauffeurs who were heading for home by back roads.

Rumor hath it that in some way the monstrosity was coaxed into the old garage, now used as a storeroom by the fire department. But although hidden from sight, in fire and police circles, and amongst those who really saw it, it's still a weird dream!

In White Plains at least, and at last, they have the answer to the hit song, and know the meaning of THE THING!!!

All joking aside, "The Thing" is a real entity. It is a welding of the fore-end and rear-end of an aerial ladder that had outlived its usefulness; nevertheless the old Christie will still percolate, and the tiller-combination of the rear-end will still steer. Both ends may in time serve to rehabilitate another old aerial ladder, as yet in service.

Confronted with the decision, to keep or discard usable "appendages" of drive and tiller, Fire Chief Edward MacDonald and his master mechanic (who insists upon remaining anonymous) decided to "play both ends against the middle." And so Christie Front-Drive and Tiller-and-Gear were united in unholy weld-lock to enable them to be moved about at will, and stored against the later-day-need, in the abbreviated police garage. When and if a front or a rear end is wanted for the final remaining wood aerial in the department, all that need be done is "divorce" the head and tail of "The Thing"— and graft them on the aerial frame of the old ladder.

White Plains Fire Department Displays Novel Unit

News of the Manufacturers

Oren Makes Changes

With the purchase of the majority interest in the Oren Roanoke Corporation and the retirement of its President, Mrs. Kathryn Lemon Windel, Mr. and Mrs. Francis S. Brigham have assumed control and active management of the Corporation, which produces motor fire apparatus in Roanoke, Virginia.

Mrs. Brigham has been elected President; Mr. Brigham, Vice President and General Manager, and William K. Dyer, Secretary. Announcement is made of the appointment of Robert W. Le Blond as Sales Manager to succeed Brigham.

In addition to its line of custom-built and commercial chassis-mounted pumpers, expansion into the air crash truck field is planned as soon as conditions permit. Oren's 500-600 and 750-1000 gallon pumpers are described in literature recently issued.

Dry Chemical Piped System

A dry chemical piped system, designed for automatic protection of industrial fire hazards, has been developed by Ansul Chemical Co. of Marinette, Wis.

This new fire protection system, the first using dry chemical as extinguishing agent, is operated by an H.A.D. (heat-actuated device) mechanism. When fire starts and temperature increases, air expands with the H.A.D. This trips a nitrogen cylinder release, pressurizing the dry chemical container.

Dry chemical is then discharged through strategically located distribution heads onto the fire area.

Automatic controls can be added to the system to close doors, windows, ventilation ducts and to operate valves on pipes carrying flammable liquids. Electric controls can be included to shut off motors and fans, sound alarms and transmit signals to central stations of fire alarm headquarters.

Manual operation as well as automatic is provided in all installations.

Ansul Dry Chemical Piped Systems are specially recommended for the following types of hazards: paint dip tanks and spray booths, ovens, driers, oil quench tanks, flammable liquid pumping stations, transformers, diesel and gasoline engines, printing presses, loose textile stocks, oil storage tanks, flammable liquid storage rooms, marine hazards, asphalt saturators.

Merion Fire Company Gets New Unit

More than 5,000 Main Line families got a powerful new ally against the menace of fire last week as the Merion Fire Company in Ardmore took possession of a large fog-producing fire engine.

Furnished with two high-pressure fog guns (which can be converted quickly to discharge foam), with portable carbon dioxide extinguishers, ladders, Indian tanks for grass fires, gas masks, respirator, oxy-acetylene emergency outfit, and a battery of powerful flood lights, the new Merion engine is a highly mobile crash truck designed to do fast rescue work and hold damage to a minimum.

The new engine, a C-70 Autocar with a 145 horsepower engine, was turned over to the Merion Fire Company, currently celebrating its 60th anniversary, last month, after it had been put through its paces in actual fire tests on the proving grounds of the Pyrene Manufacturing Company in Newark, N. J.

A check covering final indebtedness, was paid to Bernard Plungis, president of the Edgar Road Tank Works, of Linden, N. J., by William J. Torpey, 342 Hazelwood Rd., Ardmore, chairman of the Merion Company's apparatus committee. The Linden company built the body and furnished all equipment for the new vehicle.

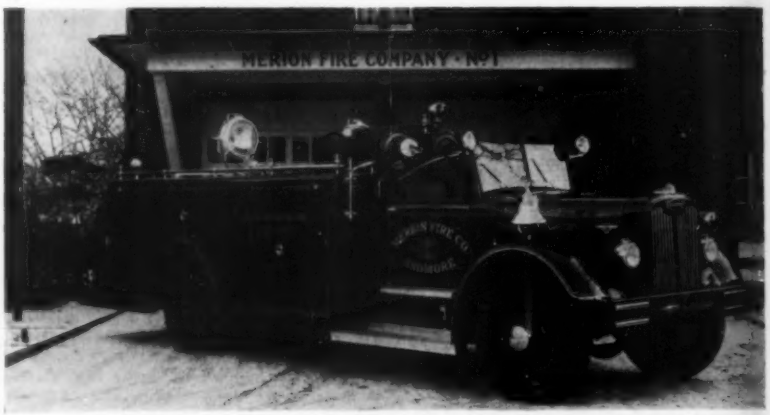
Fifteen members of the Merion Company, including Chief W. Stewart Hoyle and Deputy Fire Marshal James W. Mullin, of Lower Merion Township, were on hand at the proving grounds and were given instructions in the use of the high pressure fog guns.

Instruction on the fog guns, similar to those used by the Navy for shipboard fires during the last war, was given by Chief Frank Miller and Captain William Weitzman, of the Linden, N. J., Fire Department. That department, said Chief Miller, has had a similar piece of apparatus equipped with fog guns since 1946 and obtained a second one more recently. He said that 90 per cent of the department's 600 fires a year have been put out with the fog guns.

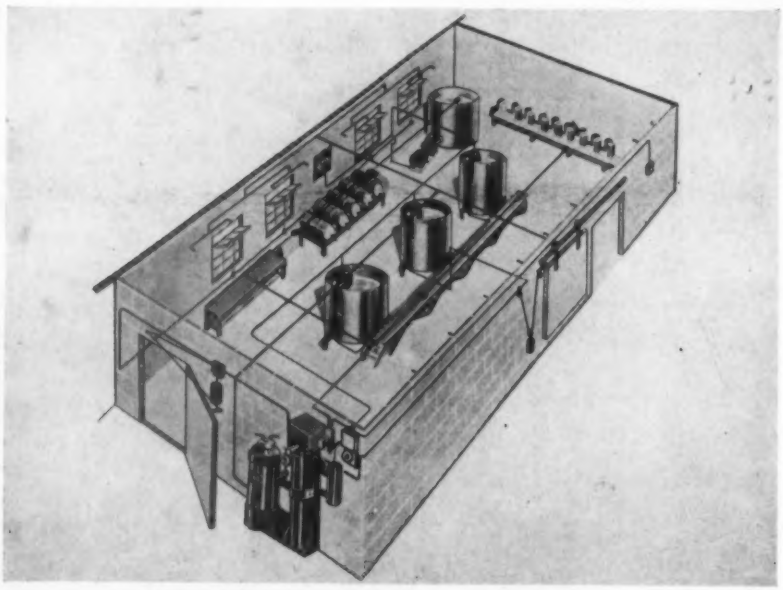
An interested witness who also tried his hand at the fog gun was Deputy Chief Milford K. Dorff, of the Philadelphia Fire Bureau. He said he was greatly impressed with the tests. Philadelphia has no fog equipment for fire fighting.

Following the tests at the Pyrene proving grounds, Plungis, the head of the body works in Linden, revealed that he had built about 75 similar trucks for the government for airport protection during the war. He also disclosed that the government had tested the vehicle—with "satisfactory results"—in decon-

(*Continued on page* 308)



Ready to Ride
New fire truck of the Merion Fire Company shown drawn up outside the fire house in Ardmore, Pa.



Artist's Conception of Typical Flammable Liquid Storage Room, Protected by Dry Chemical Piped System. As Extinguishing System Floods Fire Area with Dry Chemical, Automatically-Operated Controls Close Doors and Windows, Shut Off Motors and Valves, Sound Fire Alarm.

For high-pressure work...

When your lines are stretched and the streams tear into the blaze—pressure is vital. That's when you can depend on Eureka, the hose that will not "washboard." Four of Eureka's big advantages are—

BALANCED-WEAVE CONSTRUCTION, in both multiple-woven and double-jacket hose, eliminates dangerous writhing and twisting under high pressures.

SMOOTH-INTERIOR FILLER PLY prevents "washboarding" of rubber lining, reduces friction loss so that you get better nozzle pressure without increase in pump pressure.

MILDEW-PROOFING: Double-jacket hose can be furnished antiseptically treated or wax and gum treated to prevent mildew and rot.

BOMB-TESTED RUBBER LINING to guarantee longer wear.

"For greater protection to life and property"

EUREKA FIRE HOSE

Since 1875, Specialists in Manufacturing Circular-Woven Cotton Rubber-Lined Fire Hose

195 Hudson Street • New York 13, N. Y.

Division of United States Rubber Company

We shall appreciate your mentioning FIRE ENGINEERING *when writing advertisers*

World Wide Fire News

By Roi B. Woolley

New Bomb Treatment Omits Bandage

A method for treating human beings severely burned by the blast of an atomic bomb that requires no bandages was revealed in March by Col. William S. Stone, commandant of the Army Medical Graduate School, Washington, at the meeting of the college of Medical Evangelists in Los Angeles.

Col. Stone told the meeting that simply exposing the burned surface to warm dry air, using no medication, results in a firm dry crust over the area in 24 hours. Antibiotics control infection.

This method, reducing the pain and healing time, he said, would also minimize the bandages to be stockpiled by community hospitals. Nursing care would also be far less than required with ordinary treatments requiring application of bandages.

Col. Stone advocated the use of salt and bicarbonate of soda taken by mouth for severely burned persons who may also be suffering from shock. The salt and soda solutions made up for the deficiency of sodium in the uninjured tissues that have been affected by the destruction of living matter in other parts of the body.

Another treatment, recommended by Col. Stone in cases involving burns of more than 20% of the body surface, is the application of tight bandage, unmedicated and removal from the burn in 14 to 21 days when the destroyed surface is ready for skin grafting. Both methods are standardized at the Brooke Army Medical Center, he said.

The open, or non-bandage treatment, is readily applicable to self-treatment with a few items from a first-aid kit to control pain and infections, he said. This would relieve the expected overload on the doctors and nurses during an emergency and leave them free to care for the very seriously burned and those having other injuries.

* * *

Singapore Red Arsonists to Be Shot at Sight

As part of a stepped-up campaign to stamp out terrorism at Singapore and in Malaya, British authorities have given shoot-to-kill orders to police fighting Red arsonists in the streets of Singapore. At the same time, senior boys in British public schools in that city have been given rubber truncheons for use on Communist junior terrorists.

Red terrorists have been setting fire to taxicabs, buses and buildings at Singapore. John Pennefather-Evans, new Singapore police commissioner, said police have been instructed to shoot Red arsonists at sight.

Schools have been a favorite target for junior Reds and authorities have launched a series of "anti-Communist drills" in the schools, armed the senior boys with rubber clubs, and told younger students to hurl books, inkwells, shoes or anything they can put their hands on at any Red raiders. A siren will put a school in an alert when a Red raid is expected and gates will be locked automatically.

It is said that Jenderom village, which has been the scene of Red raids, and is believed to be a "wasp's nest" of Communist terrorism, will be burned in April. Over 12,000 suspects are already in detention camps, it is also reported.

* * *

Philippine Fire Leaves 8,000 Homeless

Between 5,000 and 8,000 persons were left homeless by a wind driven fire on Mar. 9 that destroyed five thickly settled business and residential blocks in Iloilo on Panay Island, south of Manila, in March. One man was reported burned to death. The damage was estimated at $1,000,000.

The fire finally burned itself out at the waterfront. Two plane loads of Red Cross relief were sent to Iloilo. The homeless were being fed at hastily organized relief stations.

Most of the homes and small business buildings destroyed by the fire were temporary structures built since the end of the war. Many had thatch roofs.

* * *

Plane Crashes "Bomb" Citizens

On February 27 seven children narrowly escaped injury when a light plane making a forced landing at Clark Township, N. J., struck and nearly demolished a wooden platform under which they were playing. Six of the children were treated at their homes for minor cuts and bruises, the seventh was hospitalized.

The two-seater training plane had taken off from Westfield Airport with an instructor and a student flyer. It just cleared the end of the runway, rode about 50 feet in the air then lost altitude. The pilot in turning sharply to avoid houses struck the platform with a wingtip of his plane, scattering chunks of wood among the children.

TOUGH and TRANSPORTABLE!

for FORESTRY SUBURBAN and RURAL Service

2 SIZES

4 to 5 horsepower gives 4-6 g.p.m. at the nozzle

•

6 to 7½ horsepower gives 8-10 g.p.m. at the nozzle

•

ADJUSTABLE UNLOADING REGULATOR

POWERFUL OPPOSED PISTON TYPE PUMPS

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REEL CAPACITY UP TO 400 FT. ½" (800=) HOSE

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HEAVY-DUTY SKID MOUNTED TANKS

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35-FOOT PROJECTION BEYOND NOZZLE

•

600 p.s.i. at the NOZZLE!

• • •

Standard JEEP TYPES available with 75 & 100 gal. tanks. 5 H.P. Engines 4 to 6 g.p.m. output.

Superb Stand-by Equipment

The HURST Super-Booster is a carefully engineered advancement in auxiliary and patrol fire-fighting equipment! Simple to load, fill and operate. Rugged, ball-bearing mounted pump with stainless-steel pistons assures low upkeep cost. The HURST Super-Booster is complete—ready to throw aboard any one or one-and-a-half ton truck—and put into service. Each unit is pre-tested before shipment.

Exclusive AQUA-JET Nozzles

VARIABLE Impinging TWIN-JETS

HURST INDUSTRIES, Inc. • SAN JOSE • CALIFORNIA

hi HURST Super-Booster

write today for complete specifications

HU-80 HURST INDUSTRIES, Inc., San Jose, Calif.

HOW TO BE A HERO —*AFTER* THE FIRE!

CUT SMOKE ODOR DAMAGE

THIS WONDERFUL PROVEN WAY

NO handling of the damaged merchandise or furnishings.

NO danger of soiling, spotting, bleaching, contaminating.

NO flash-point . . . wholly non-explosive and non-poisonous.

YES, Airkem Smoke Odor Service is low-cost, quick, easy.

YES, greatly reduces claims and helps your insurance companies.

YES, it's smart public relations to use or recommend it.

MAIL COUPON NOW!

Get up to date!

AIRKEM, INC.,
241 East 44th Street
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Smoke Odor Service

Gentlemen: You bet I'm interested in the up-to-the-minute techniques of minimizing smoke odor damage your proven quick, easy, low cost way. Please send me all the facts immediately.

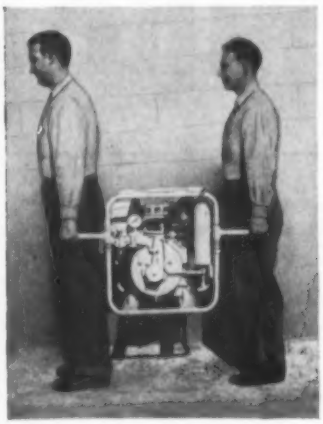
NAME_____ ORGANIZATION_____

ADDRESS_____ CITY_____ STATE_____

HALE Type FZZ

Fine for Re-laying to Major Pumper . . .

Easily Carried by 2 Men



Chief Leon Arnold of Newellton, La., writes . . .

We have received from you your portable Pump, Type FZZ, which we are thoroughly satisfied with. We have only had to use it once since our purchase in September of last year, but it did a big pump job for 1½ hours through a 300-ft. line of 2½-inch hose branching off in a "Y" to two 1½-inch lines, 150 ft. each.

We carry this unit on our 500-gallon pumper to use in places where we cannot get near enough to water. Two men can easily carry it any place.

We recommend the Hale FZZ Portable Pump for any Fire Department.

The Hale Type FZZ portable fire pumping unit pictured at top can be easily carried by two men to source of water which truck cannot reach, for refilling booster tank or for fighting fire direct. Unit is also available mounted on two truck-type wheels or on rubber-cushioned steel channels.

The unit can be mounted on virtually any apparatus, making it possible to fight fire while apparatus is in motion, using booster tank for source of water.

Capacity of FZZ is 60 G.P.M. at 90 lbs. pressure; 150 G.P.M. at 30 lbs. pressure. Provides two capable fire streams through 1½-inch hose lines, using ⅝-inch nozzles. **Note:** Discharge Adapter can be supplied for use with 2½-inch hose.

Ask for demonstration; no Obligation.

Write today for FZZ Folder to:

HALE FIRE PUMP COMPANY

CONSHOHOCKEN, PA.

Fire Pumps in All Standard Capacities

He managed to land the plane without injury to himself or passenger. Fortunately no fire developed.

A Navy fighter plane crashed and exploded in a street in Egg Harbor, N. J., the night of March 8th, after its pilot had bailed out. The plane was on a night training mission when the engine lost power over the city at 3,000 feet. The pilot parachuted to safey and the gull-winged Corsair crashed into Bremen ave. about four blocks from the heavily traveled White Horse Pike, then it skidded into a patch of woods and exploded. Chunks of wreckage were thrown for 100 feet to litter the area.

Egg Harbor firemen responded quickly and blanketed the debris with foam. The Galloway Township firemen, also called, picked up the pilot whose only injuries were scratches received from walking out of the woods.

* * *

From the World News Ticker

It was disclosed on March 17 that America's newest and deadliest atomic weapons will be tested at the Eniwetok proving grounds in the Pacific the first week of May. . . . In March, millions of persons in Northern Europe were terrified by a violent shuddering of the earth's crust which some thought might be caused by an atomic-sized explosion inside Eastern Germany. The tremor, one of worst ever recorded in Germany, was followed by a giant blast of wind. Seismologists claimed it was an earthquake. . . . Near Cincinnati, O., in March, an unaccounted explosion, which shook concrete walls and broke windows over a 20-mile radius, was at first attributed to a jet fighter plane which jetisoned fuel before making a crash landing at Lockburne Air Force Base. David Ross, industrialist, and his 7-year-old daughter Ruthe Anne, were killed in a fire that destroyed the family's palatial lake shore home. Ross, 54, president of Progressive Industries, Inc., was a Zionist leader who recently visited Israel. Two other daughters and a son escaped the flames. . . . Firemen of Merthyr Tydfil (Eng.) are protesting against an order to do painters' work at the fire brigade headquarters. . . . Heinrich Dilcher, volunteer fireman of Burguffeln, Germany, told the judge who gave him 20 months for starting a costly fire in a barn, that the reason for the fire was his desire to show how well he could sound "the alert" on his new bugle (Fire) . . . Lady luck was on the job when an explosive-laden freight train plowed into the rear of a snowbound freight train one and one-half miles east of Carnarvon, Iowa, on March 18. Eight cars of explosive failed to explode. Three crewmen were injured. . . . The fire chief of Kumomoto, Japan, called on the railway stationmaster to apologize for his fun-loving fire fighters' prank. The firemen, holding their annual ladder-climbing drill in a playground beside the railway tracks, saw the crack Tokyo express racing into the city. They trained their hoses on the express and drenched not only the locomotive but four passenger cars, forcing the train to stop.

R. H. Davidson.

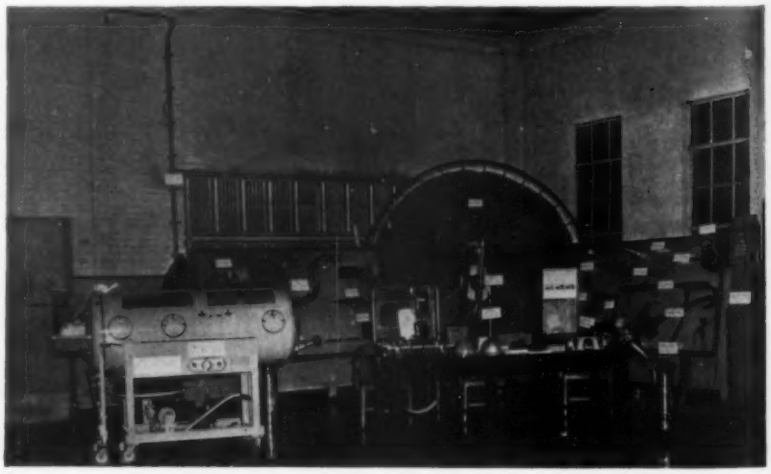
* * *

Court Bars $672,000 Fire Claim

The Australian High Court on March 19 last, dismissed an appeal by the Eastern Asian Navigation Company against a lower court's rejection of its claim for $672,000 for alleged damages to the Steamer Panamanian in a 1945 fire at Freemantle Harbor.

Court records show that the fire of January 17, 1945, started when a stevedore threw a piece of burning sacking over the side of the ship. Instead of going into the water it fell on timber stacked on a wharf. Flames shot up and damaged the Panamanian which was berthed near a submarine base.

The company contended the Government had been negligent in not preventing oil from accumulating in the harbor. The High Court said there was no evidence the oil had been there through any act or omission on the part of the harbor trust, or any other responsible person.

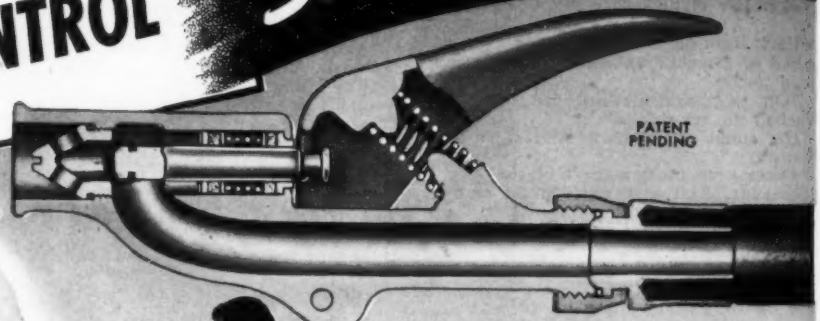


Jersey City Fire Department Cooperates in Civil Defense

As one detail of its cooperation in the city's civil defense program, the Jersey City Fire Department, Chief Frank Ertle, placed an exhibit of fire fighting and rescue equipment at city Police Headquarters. The department cooperates with both police and Red Cross in promoting fire defense. During one week, also, the department inducted several hundred civil defense enrollees at Henry Snyder High School. Area civil defense director Lewis G. Hanson officiated at the swearing-in ceremonies. During all exhibits and meetings, fire department personnel were on hand to answer questions asked. To further educate the public, small, identifying cards were placed on or near each article in the displays.

FASTER . . . MORE EFFECTIVE FIRE CONTROL

WITH THE **ANSUL** *Stream Pattern*



. . plus BETTER HEAT-SHIELD PROTECTION

EXCLUSIVE FEATURES

- Water-tight construction.
- Provides a modified cone-shaped stream pattern without hole in the center of the stream.
- Each nozzle gas pressure tested after assembly.
- Special spring loaded packing to insure lasting water-tightness.
- Designed for use by inexperienced operators.
- Low velocity, more effective stream of dry chemical.

why Advertise the Nozzle! . . .

. . . because the **nozzle** on your ANSUL Dry Chemical Fire Extinguisher is **water-tight** . . . it **won't** become inoperative due to corrosion or caking of dry chemical within the working parts . . . the most inexperienced man in your plant **can use the ANSUL extinguisher effectively . . . *and only Ansul has a nozzle*** to meet all of these requirements!

If your hazards require special long range straight stream nozzles, you can get Ansul Extinguishers equipped with these nozzles at no extra cost. With Ansul Dry Chemical Fire Extinguishing Equipment you have not only the best fire protection but also a choice of models and designs to meet your requirements.

Send for File No. 654. You will receive our latest catalog, a Periodic Inspection Record Chart, "Fundamentals of Fire Extinguishment" and information about Ansul Dry Chemical Piped Systems for automatic protection.

ANSUL
CHEMICAL COMPANY
FIRE EXTINGUISHER DIVISION
· MARINETTE, WISCONSIN
DISTRIBUTORS IN ALL PRINCIPAL CITIES IN THE U. S. A., CANADA AND OTHER COUNTRIES

"PLUS-FIFTY" DRY CHEMICAL IS MORE DEPENDABLE *ALL-WAYS!*

THIS TRADE MARK ASSURES YOU OF QUALITY PRODUCTS

FALSE ALARMS

Co-respondent

Hubby: "If I'm unable to be back tonight, I'll write you a note."

Wife: "Don't bother, dear. I've got the note already. I found it in your pocket last night."

Back from his day in the office, father asked of his children whether they had been good.

"Oh, yes," said his little daughter, "I washed the tea-things."

His small son added: "And I wiped them dry."

Turning to the youngest of the trio, he asked: "And what did you do, Margaret?"

In high glee she reported: "I picked up the pieces."

A young man stared into a mirror one morning and, noting his bloodshot eyes, resolved never to go into a bar again. "That television," he muttered, "is ruining my eyes."

Lieutenant: "I'm glad to see that you are arriving on time these days, Johnson."

Rookie: "Yes sir. It's quite easy now that I have bought a parrot."

Lieutenant: "A parrot? What on earth for? I thought you were going to buy an alarm clock.

Rookie: "Well, I did buy the clock. But after three days, I got used to it and it didn't waken me. Now when I go to bed I set the clock on top of the parrot's cage. What the bird says when the alarm goes off would waken anyone!"

Highly Selective

I want a boy who doesn't think
A girl should pet and a girl should drink;
I want a boy who doesn't drool
Like a poisoned pup in a vestibule;
I want a boy who can run a car
That doesn't stop at the nearest bar—
A boy whose stories are never shady,
A boy who is fit for a perfect lady!
(And I'll search and I'll search 'til I find the lad
For the dumbest girl friend I ever had!)

Backfire

An enthusiastic reader of a certain newspaper sent a specimen of her sweetheart's writing to the handwriting expert on the paper's staff.

"Can you tell by this writing if he's apt to make a good husband? she asked.

Back came the reply: "I'm afraid not, my dear. He's been a pretty rotten one to me for three years. But—thanks for the evidence."

This is an excerpt from a letter written by a freshman girl up at the boarding school:

". . . and I am gaining on this awful food they serve me at the dorm, too. I weigh 120 stripped, but I don't know whether those scales down in front of the drug store are right or not."

A male nurse in a mental hospital noticed a patient with his ear close to the wall, listening intently. The patient held up a finger as a warning for him to be very quiet, then beckoned him over and said: "You listen here."

The nurse put his ear to the wall and listened for some time, then turned to the patient and said: "I can't hear anything."

"No," said the patient, "and it's been like that all day."

Printer's error: "Judge Bentley, one of our most eligible bachelors, is retiring from politics. Hale, hearty, and 55, the judge says all he wants is a little peach and quiet."

Foreman: "When will your father's leg be well so he can come back to work?"

Son: "Oh, not for a long time yet."

Foreman: "Why?"

Son: "'Cause compensation's set in."

Chaplain: "My man, I will allow you five minutes of grace before your electrocution."

Condemned Man: "That's not very long, but bring her in."

Him: "I wonder why women pay more attention to beauty than to brains?"

Her: "Because no matter how stupid a man may be, he is seldom blind."

Here is a mighty interesting sign in a restaurant window that should get results:

WANTED—Man to wash dishes and two waitresses.

"Do you mean to say that you pose for a man with no clothes on?"

"Heavens no. He wears pants and everything."

From a recent convention, one of the somewhat inebriated delegates wired his wife: "Having a wonderful wish. Time you were here."

Shocked Old Lady: "And on the way here we passed about 25 people parked in cars!"

Young Hostess: "Oh, I'm sure you must be mistaken. It must have been an even number."

"Darling, the maid has burned the eggs. Would you be satisfied with a couple of kisses for breakfast?"

"Sure. Send her in."

An old man noticed a young fellow with a bottle in one hand and his arm around a pretty girl. "The dern whippersnapper is wastin' a lot of time. He can drink when he gets old."

"The Wise Guys Who Reported It Said It Was Only a Brush Fire!"

here's 6 and 7 for Dallas with the 8th on order

all of 'em 750 GPM PUMPERS with

GENERAL

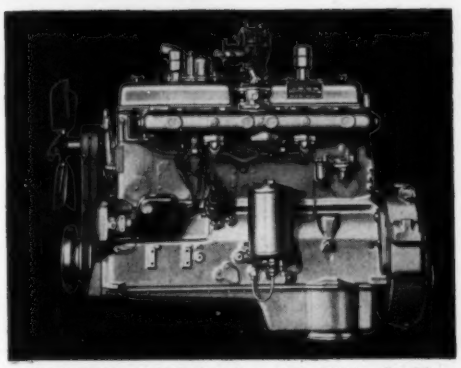
123

WAUKESHA ENGINES

• The *ayes* of Texas, particularly in Dallas, are voted for Waukesha High Output Fire Engines. They power these two 750 GPM pumpers—the sixth and seventh for Dallas from General Fire Truck Co., Detroit, Mich., with the eighth now on order.

Now in its 47th year, General Fire Truck Co. certainly knows how to build motor fire vehicles and how to power them. Waukesha-engined Generals are just as popular in Cleveland, Ohio, Knoxville, Tenn., Palatine, Ill., for example. And for the same reasons—with Waukesha positive power and performance one of the biggest.

Powering the pumpers shown is Waukesha Model 140-GZB 200 hp Fire Fighting Special with counterbalanced crankshaft, twin ignition, down draft carburetion, removable wet cylinder sleeves, aluminum pistons and many other features. Send for Bulletin 1484.



WAUKESHA 140-GZB High Output Fire Fighting Special
Six cylinders, 4⅞-in. bore x 5½-in stroke, 554 cu. in. displ., 200 hp at 2600 rpm.

WAUKESHA MOTOR COMPANY, WAUKESHA, WISCONSIN
NEW YORK TULSA LOS ANGELES

Kindly mention FIRE ENGINEERING *when writing advertisers*

gets the drop on FIRE

DRENCH DOUBLES WATER SUPPLY SPEEDS ACTION

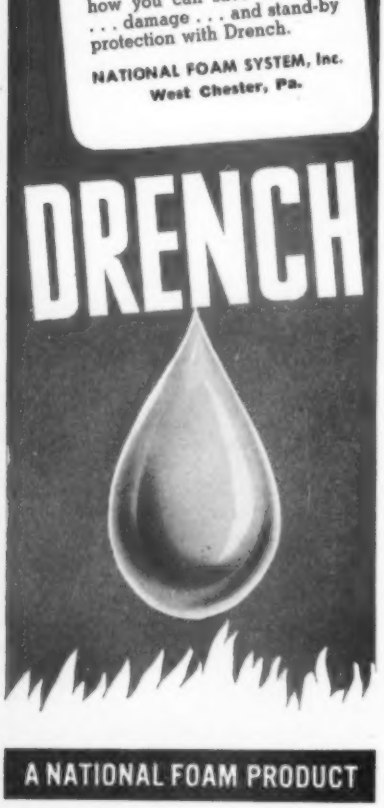
For faster, more thorough action on fire with less water, add Drench to your water supply.

Makes water wetter! Just a 1% proportion by volume of Drench added to your water supply will double its fire fighting effectiveness. Helps you fight fire faster . . . knock it down . . . and keep it down.

Drench effectively changes the characteristics of water without limiting its use or requiring special equipment. Join the hundreds of fire companies now using Drench. Write for complete details on how you can save on water . . . damage . . . and stand-by protection with Drench.

NATIONAL FOAM SYSTEM, Inc.
West Chester, Pa.

DRENCH



A NATIONAL FOAM PRODUCT

For Practical Discussion of Current Fire Department and Fire Management Problems

FIRE DEPARTMENT TRAFFIC PROBLEMS

THE discussion in this Round Table is a continuation of that which appeared in the January, February and March issues of FIRE ENGINEERING on fire department traffic problems.

The generous response from our readers made it necessary to carry the discussion over to this issue.

Readers are invited to send in their comments on this subject or on next month's subject which is described in a box on a subsequent page, to Round Table Editor, FIRE ENGINEERING, 24 West 40th Street, New York 18, N. Y.

Discussion of the Question

G. R. McAlpine, Chief, Oklahoma City, Okla.: Operators of motor vehicles in our city yield the right of way readily to the fire department even in the heavy traffic areas, but passing through red lights at the intersections is a different matter.

When the signal is red, it is our policy to approach the intersection with extreme caution.

To drive fire apparatus against the traffic on a one-way street is a question of great importance, and in our case, we avoid doing this as much as possible.

If it becomes necessary to use a one-way street for the movement of apparatus, we only use the block where the fire is located in going against the traffic when it is at all possible.

Everyone knows when a fire is reported, that the fire department is going to respond and that they would ignore one-way streets or any other barriers to get to the fire. We must also remember that during heavy traffic hours, we can easily be blocked by the one-way street having all lanes full, making it impossible for the traffic to give clearance, but if we enter the one-way street one block from the location of the fire, we can turn our engine around and take suction at a hydrant. Should we become blocked from two to three blocks and possibly a greater distance from the fire, we are helpless as far as that company is concerned.

My instruction to the Oklahoma City Fire Department is to proceed with extreme caution when involved in heavy traffic, and especially when approaching an intersection against the red lights, and above all, keep warning signals sounding at all times.

It is much better to come to a complete stop than to be involved in even a minor accident, and surely you will prevent a major accident.

Our instructions are never to use a one-way street where you must go against traffic, if it is possible to reach the fire by some other route. If it is necessary to use the one-way street for the movement of fire apparatus against the traffic, do so with extreme caution.

Our regulations call for a maximum speed of 35 miles per hour. In our city we know this rule is violated and it is all but impossible to enforce this speed rule. We must trust to the honesty of the company officer and the motor pump operators or drivers.

Sometimes our chief officers are prone to question the company officer upon his arrival at the fire as to why he was one minute or even a half minute late getting to the fire. I believe the company officer should be commended if his tardiness is the result of being cautious with the lives of men and the apparatus.

We must realize that the driver is under direct orders from his company commander and that the company commander is a direct agent serving under orders, establishing the policies by the chief of the department, and the city is protected by the fact that the movement of fire apparatus to fires is a government function.

Should the apparatus have faulty

HERE IS THE TOPIC

1. **Is fire apparatus given the right of way in heavy traffic areas, in passing red lights and going down one-way streets against traffic as the shortest means of getting to the fire?**
2. **Is the rate of speed regulated upon going to a fire? If so, what speed?**
3. **Who is responsible in the event an accident does occur? How is the driver protected?**
4. **Do you have fire lanes and what protection do you get from the police department when responding to fires in these fire lanes?**
5. **Is parking restricted to one side on said fire lanes, or is parking permitted on both sides?**

brakes or other mechanical defects known to the driver, then, should an accident occur, it is my understanding the driver, the chief and the city could be held jointly liable.

It is my belief that fire apparatus with the enclosed cab offers the most protection to drivers in case of an accident. It is true that visibility from a closed cab on fire apparatus is not as good as it is from the open cab type, but the cab adds protection to the driver in case of accident. I think the greater protection for the driver is in the reduced speed rule, and extreme caution in heavy traffic and blind intersections.

We do have fire lanes and have held schools with the police department so as to familiarize them with these lanes.

The police have been very cooperative in assisting by stopping traffic at these lanes. They also respond to all fires with two or more cars and immediately block off the fire area, preventing traffic from entering the street where the fire is and preventing vehicles from passing over the fire hose.

We have selected the boulevard type of street that carries through traffic for our fire lanes.

In some cases, all parking is eliminated; in other cases it is eliminated on one side of the street. In extreme cases, it may be permitted on both sides of the street.

In my opinion, the question of parking and double parking is one of the problems we face here. I have served many years on the Traffic Commission and I know by experience the elimination of parking is definitely a difficult problem. I have also witnessed the changeover from two-way to one-way streets, and in almost every case I have seen parking permitted on both sides of the one way street.

From the standpoint of the movement of fire apparatus to and from fires, the elimination of all parking on the fire lanes would be the ideal accomplishment, but we cannot wish for the ideal situation. We must strive for the next best, and in my opinion, if parking could be eliminated on one side of the fire lanes, we would have accomplished a lot.

John Zanet, Chief, Clifton, N. J.: Fire apparatus is given the right of way in heavy traffic areas, whenever possible.

Apparatus only passes through a red light when a police officer is present or when the driver is sure that all traffic is stopped. As far as one-way streets are concerned, if the company officer can see his way clear, it is all right to go down them against traffic.

The rate of speed going to fires is entirely up to the officer. The driver must have the apparatus under control at all times.

In the event of an accident, the officer is responsible to the city. The operator is covered by insurance.

We do not have fire lanes.

Ben J. Zahn, Chief, Ann Arbor, Mich.: In our city, fire apparatus is given the right of way at all times when going to a fire. We do proceed with caution, however, when running red lights. Upon the return trip all traffic regulations are strictly observed. When traveling one-way streets we

Super Powerful

2 TO 3 TIMES ANY COMPETING PRODUCT

RED WARNING LIGHT

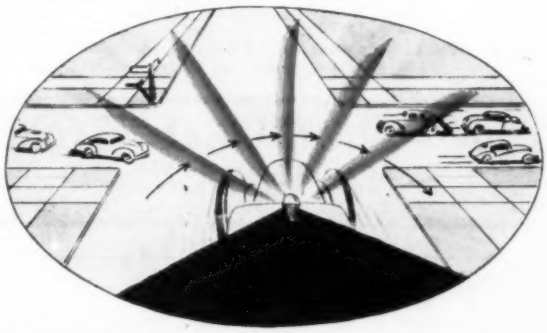
1/2 THE USUAL COST

- REVOLVING
- FLASHING
- 90 TIMES A MINUTE
- STOPS TRAFFIC • HALTS PEDESTRIANS

THEY SEE IT BLOCKS AWAY — 3000 FT.

by day, a mile or more at night. Its 100 to 150 candle power source (not 32, not 50) warns traffic even in the worst weather.

FROM EVERY ANGLE THAT COUNTS—front, sides, ⅓ to the rear on both sides, full 240°—but masked behind so observers, seeing red, know *which way it's rushing.*



CLEARS THE WAY FOR SPEED

Commanding instant attention with its unmistakable, rapid pulsations of brilliant red, effective in any weather, this TRIPPE Revolving RED WARNING LIGHT clears the road ahead, lets you travel faster—with more safety for men, equipment and public.

MOISTURE PROOF · SHATTER PROOF · GUARANTEED

Moving parts enclosed in triple plated chrome case; insulated against freezing. Easily installed on roof or fender of truck, ambulance or chief's car. Available in 6 volt 100 c.p. or 12 volt 150 c.p. LOW PRICED. *Investigate!*

TRIPPE MANUFACTURING CO.

609 W. LAKE ST., CHICAGO 6, ILL.

travel with the flow of traffic, as we find this faster than bucking oncoming traffic. We do not have too many one-way streets, however.

Our rate of speed is held to around 30 miles per hour with exceptions in outlying areas where less traffic is encountered. There our speed may be increased to 35 miles. We feel it is more important to get to the fire, even if it takes a minute or so more to get there.

Several years ago we made quite a few inquiries as to who was held responsible in the event of an accident in traveling to fires, and could not find any instant in which the driver was blamed. We have only been sued once, and the party suing lost his case.

We have certain streets that we travel going to fires. We consider these fire lanes, but they are not so designated by signs. On most of them the parking is restricted to one side of the street. We get excellent cooperation from our police.

Arthur C. Green, Chief, Malden, Mass.: Fire apparatus is given the right of way in heavy traffic areas. Apparatus must come to a complete stop before passing red lights unless otherwise directed by a police officer. We are not allowed to go down one-way streets to a fire.

Our rate of speed is not regulated, but if it is more than the speed allowed in the city, the safety of the general public must not be endangered.

The officer in charge of the apparatus is held responsible in an accident, but the city assumes costs of damages unless driver of apparatus is negligent.

Michael H. Lotz, Chief Engineer, Baltimore, Md.: Fire apparatus is given the right of way in heavy traffic areas, in passing red lights and going down one-way streets against traffic when responding to a fire.

According to traffic conditions, the rate of speed is regulated to 25 to 35 miles per hour.

The operators of fire apparatus or departmental vehicles are held responsible in the event of an accident, but are protected by the municipality.

We do not have any fire lanes. We have the full cooperation of the police authorities at all times.

Donald J. Kelley, Chief, Burlington, Vt.: We are given right of way but any driver must respect a red light at all times. If he can get across on a red light safely, he may go at his own discretion.

Speed is not regulated, but it is up to the discretion of the driver.

This department carries liability insurance for personal and property damage to the amount of $50,000 and $100,000. We do not have to have it, according to the lawyers, but we carry it as a protection for the drivers.

We do not have fire lanes.

G. Napoleon Guevin, Chief, Manchester, N. H.: Fire apparatus is given the right of way in heavy traffic areas.

Speed is regulated to 35 miles per hour maximum, and apparatus must be under complete control at all times.

In the event of an accident, the driver is held responsible. Protection is given him through liability and property damage insurance carried by the city.

We do not have fire lanes.

Insert Shows Floodlight Elevator in Raised Operating Position

EMERGENCY FLOODLIGHT TRUCKS

DeLuxe CUSTOM BUILT EQUIPMENT with or without the FLOODLIGHTING FEATURE, All Steel Enclosed

THREE - MODELS

THE SENIOR (3 ton Chassis, 175" Wheel Base)

THE STANDARD (2 ton Chassis, 158" Wheel base)

THE NEW X-L ECONOMY UNIT (1½ ton Chassis, 158" Wheel Base

All Models carry complete First Aid and Salvage Equipment as required by the customer.

The SENIOR MODEL—most suitable for cities, is equipped with exterior and interior compartments and seats for the crew. Five built for the City of New York; one with portable floodlighting equipment and four with 10KW power take off driven generator and elevator controlled floodlights. Three built for the City of Philadelphia, with 10KW elevator controlled floodlights.

The STANDARD MODEL—for the average Fire Department, with or without elevator floodlights, equipped with exterior compartments, and the interior equipped with mounted stretchers and seats for the crew. This model in service in many Fire Departments for over 10 years.

The NEW X-L MODEL—provides maximum facilities at minimum cost.

Write for detailed construction and electrical specifications, photographs and prices and state your requirements.

AFE APPROVED FIRE EQUIPMENT CO.
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HALLIGAN FORCIBLE ENTRY TOOL *Specify it!*

Does the work of 10 tools!

Take the word of men who know!

BOSTON—"Open Up Man"—"works alone—reduces injury."
KEARNY, N. J.—"Finest implement in fire service."
UNION CITY, N. J.—"Best all-round tool in fire service."
SYRACUSE, N. Y.—"Does everything claimed—and MORE."

ORDER SIX *get one free* **$36.00 each**

Belongs on every piece of apparatus, police cars, crash trucks, emergency cars, piers, ships, etc.

M. A. HALLIGAN, 1505 Metropolitan Ave., N. Y. 62, N. Y.

All parking problems are considered by a traffic committee. Fire conditions and traffic resulting therefrom are always considered by this committee when new regulations are to be formulated.

Walter G. Strickfaden, Chief, Columbus, Ohio: Fire apparatus is given the right of way in heavy traffic areas.

We do not have any set speed. Officers and drivers are all instructed to use judgment and to regulate speed accordingly.

In performing governmental duty of going to a fire, there is no liability. Returning, the driver operates under same law as any other motorist.

There has been quite some discussion on the possibility of fire lanes, but at present we have them for a distance of approximately 150 feet, usually from the engine house to the nearest street.

The fire lane we have is for through traffic only. There is no parking or loading or unloading of merchandise in the lane.

Donald S. Charles, Chief, Charlotte, N. C.: Fire apparatus is given the right of way in responding to an alarm of fire.

Speed is not regulated.

The city assumes responsibility for accidents and therefore protects the driver.

No fire lanes are designated. Police direct traffic at street intersections.

No parking signs are posted on streets where width of roadway does not exceed 27 feet and on one side of street where width exceeds 27 feet, but does not exceed 32 feet.

Howard L. Dey, Chief Engineer, New Orleans, La.: Fire apparatus in New Orleans is given the right of way through heavy traffic areas when responding to a fire. Speed is regulated at 30 miles per hour.

The city carries liability insurance on its equipment in the event of an accident.

We do not have fire lanes, but receive the fullest cooperation from the police department.

O. E. Boegess, Chief, Charleston, W. Va.: Fire apparatus in Charleston is given the right of way in responding to a fire. Speed is not regulated, but the driver must drive sanely at all times.

In the event of an accident, the driver and captain are responsible. The driver is not prosecuted and the city has always paid the damages.

We do not have fire lanes.

C. C. Styron, Chief, Atlanta, Ga.: Fire apparatus is given the right of way in responding to alarms of fire.

Speed is not regulated.

In the event of an accident, the City of Atlanta is not liable for any damage, nor is the driver of the apparatus.

We do not have fire lanes.

E. J. Nixon, Chief, Hamilton. Ont.: Fire apparatus is given the right of way in responding to an alarm of fire. Speed is not regulated.

We do not have fire lanes.

J. N. Farmer, Chief, Petersburg, Va.: Fire apparatus is given the right of way in this city in going to a fire. Speed is regulated at 35 miles per hour.

The city is covered by insurance in the event an accident does occur.

We do not have fire lanes.

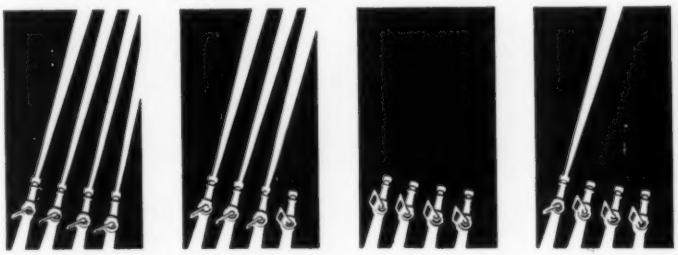
New WATEROUS
FULLY AUTOMATIC RELIEF VALVE

Assures
CONSTANT PRESSURE CONTROL

Pat. Pending

Quick . . . Positive . . . Accurate

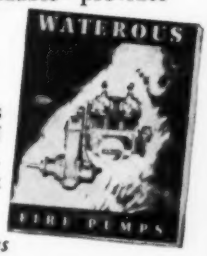
The new WATEROUS Relief Valve is the result of many years of actual fire pump operating experience.



ADVANTAGES . . .

Maintains constant pressure whether using all lines . . . a couple of lines . . . or no lines. There is no "hunting" or rocking up and down of engine speed with this valve. There is no racing or stalling of the engine when lines are shut off.

Easy to operate, easy to maintain, sensitive, dependable—provides the ultimate in water pressure regulation.



THREE VALVES IN ONE . . .

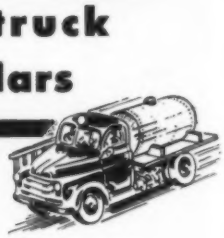
As an AUTOMATIC RELIEF VALVE, it keeps water at the required pressure. As a CHURN VALVE, it permits manual by-passing control. As a CUT-OUT VALVE, it positively cuts out relief valve.

Send for new specifications with cut-away illustrations.

Waterous
DEPENDABLE PUMPS SINCE 1886

WATEROUS COMPANY
80 EAST FILLMORE AVE.
ST. PAUL 1, MINNESOTA

Build your own fire truck for a few hundred dollars

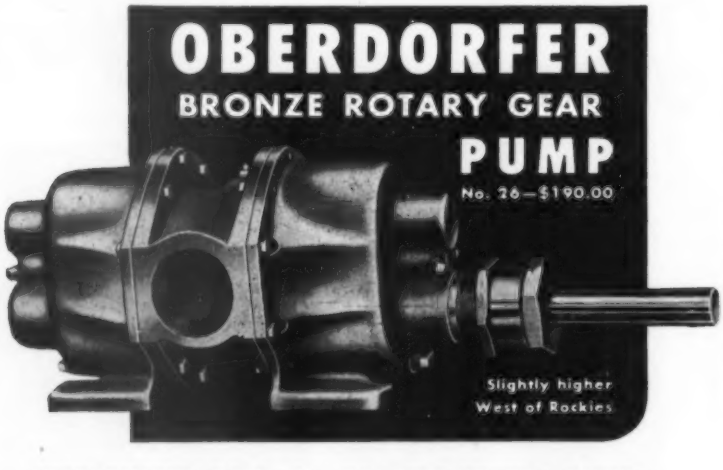


The time has come when rural fire protection should leave the "Fancy Dan" class so that every small community can do a real down-to-earth job of extinguishing fires rapidly, simply and inexpensively.

The nickel plate, red paint, gadgets and polish are good if you can afford them. But all you need for sound, economical fire protection is an Oberdorfer All Bronze Pump hooked up to the transmission of a dependable truck that carries a tank of water loaded with a good wetting agent.

Effective fire control starts just as soon as this outfit can reach its destination and a man can grab the nozzle end of the booster hose and get to the fire. The resulting penetrating stream of over 125 lbs. pressure is the fastest and most important phase of fire fighting.

Do you have a garage, a truck and a mechanic with a little common sense? We have the pump you need. Write for details.



PERFORMANCE DATA—No. 26 PUMP SHOWN ABOVE

Pump Shaft R.P.M.	Pounds Pressure	Hose Length and Size	Dry Suction Lift in Feet	Vol. in Gal. Per Minute
1600	120	500'—1½"	15'	150

For complete specifications of this and other Oberdorfer All Bronze Booster Pumps, and name of your nearest distributor, write:

FIRE PUMP DIVISION OBERDORFER FOUNDRIES, INC., Syracuse, N.Y.

BAR-WAY HOSE COUPLINGS

FOR BOOSTER and HIGH PRESSURE FOG LINES

REMOUNTABLE — without the purchase of additional parts; use over and over again

FULL FLOW — no suppression of flow in coupling

HIGH PRESSURE — tested to 3000 lb., 500 lb. pull

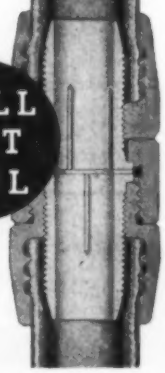
INTERNAL EXPANSION — no shrinkage of hose at coupling

STREAMLINED — free from objectionable projections

ACCURATELY MACHINED — always the same . . . interchangeable

For maximum efficiency, economy and protection in ¾" and 1" sizes, specify Bar-Way couplings attached to hose of proper size.

WILL NOT FAIL



BAR-WAY MFG. CO.
STAMFORD, CONN.
West Coast Representative
W. D. Rigdon
383 Brannan St., San Francisco 7

HERE IS THE TOPIC FOR THE NEXT ISSUE

1. Where a private establishment wishes to install a fire alarm box (which they have purchased) and connect to the municipal fire alarm system, with what rules must they comply?
2. What charge, if any, is made for connecting such fire alarm boxes to the municipal fire alarm system?
3. Is there an annual charge for maintenance of such box? If so, how much?

John C. Cost, Chief Engineer, Philadelphia, Pa.: As an emergency vehicle, fire apparatus is given the right of way in heavy traffic areas.

The rate of speed is regulated by Bureau rules and regulations and by circumstances under which the vehicle is operating.

City protection is provided through the City Solicitor's Office in the event of an accident. The Bureau of Fire does have an Accident Investigating Committee who investigate all accidents and submit their findings to the Chief Engineer for appropriate action.

There are no specified fire lanes. However, we do have restricted traffic sections designated in various areas throughout the city, particularly in the central, business and manufacturing sections of the city. This is in addition to no parking in front of fire hydrants, hospitals and other institutions. The Police Bureau red cars respond to all alarms, whether local or box alarms. Perfect police cooperation has and does exist at all alarms.

Charles E. Lane, Chief, Great Falls, Mont.: The fire department has the right of way going to a fire. Returning we are to follow traffic signals as other vehicles. We have no one-way streets. Alleys are one-way in the business district; these are blocked by delivery trucks during business hours.

Speed is not regulated, but the truck must be under control at all times.

We have public liability and property damage insurance on the fire equipment.

We have fire lanes which are marked with signs. The police department give us very little cooperation on the streets marked as fire lanes.

Parking is permitted on both sides of fire lanes.

Leo J. Urbanski, Chief, Saint Joseph, Mo.: Fire apparatus is given the right of way in heavy traffic areas. When driving against red lights, fire apparatus must slow down.

The rate of speed is regulated to 25 miles per hour, except in the downtown area, where it is 15 miles.

The fire chief and the city assumes all responsibility in the event of a fire.

We have fire lanes. The Traffic Department of the Police sends a squad car to direct traffic at all fires. Park-

ing is permitted on one side of fire lane only.

Romey L. Rudd, Chief, Fort Smith, Ark.: Fire apparatus is given the right of way in heavy traffic areas.

Speed is not regulated.

The driver of fire apparatus is not held responsible in the event of an accident, unless it is proved he has been driving recklessly.

We have some fire lanes and the police cooperate. Parking is restricted to one side in congested areas.

F. J. Wells, Chief, Fargo, N. D.: Fire apparatus is given the right of way in heavy traffic areas.

The rate of speed is limited to 35 miles per hour.

Drivers are protected by state laws which hold for all cases except where it can be proven the driver was directly responsible because of carelessness or excessive speed.

Police department responds with fire apparatus. Parking is restricted where one-way traffic is in force.

Bernard F. Rooney, Acting Chief, Auburn, N. Y.: Fire apparatus is given the right of way when going to a fire in our city.

Speed is regulated to 35 miles per hour going to a fire, except in congested districts, then speed is governed accordingly.

Under the state laws of 1929, the operator of a fire truck is protected in the event of an accident.

We do not have fire lanes in Auburn.

George T. Morgan, Chief, Wilmington, Dela.: Fire apparatus is given the right of way when responding to a fire.

Speed is limited to 25 miles an hour.

The city is not responsible in the event of an accident and cannot be sued. The driver is not protected.

John Krusenklaus, Chief, Louisville, Ky.: Fire apparatus is not given the right of way, neither is speed regulated upon going to a fire.

In the event an accident occurs, the driver is covered by insurance taken out by the city.

We do not have fire lanes.

Thomas H. Cotter, Chief, Providence, R. I.: Fire apparatus is given the right of way in heavy traffic areas in going to a fire.

A reasonable rate of speed is permitted, but not over 25 miles per hour in the congested areas.

In the event of an accident the driver is protected by the Bureau of Police and Fire.

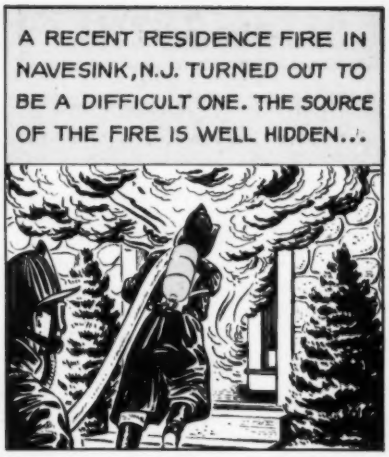
We enjoy the fullest cooperation of the police when responding to a fire. Parking is restricted on one side of the street only.

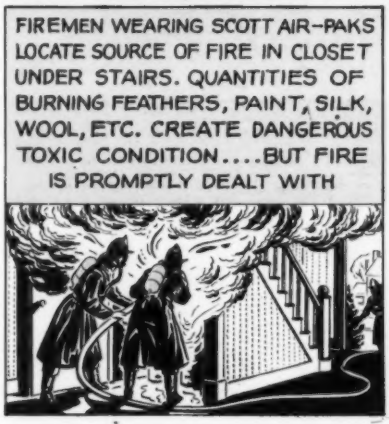
Clyde Dunn, Chief, Omaha, Neb.: Fire apparatus is given the right of way in responding to a fire.

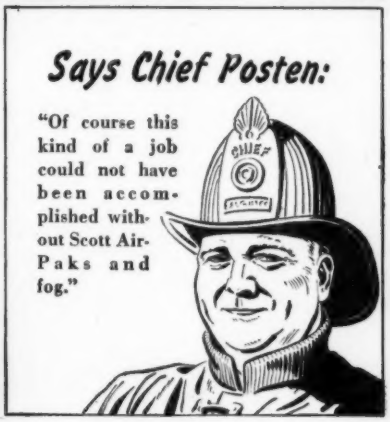
Speed is limited as follows: Trucks, 25 miles per hour; engines, 35 miles per hour and chief's cars, 45 miles per hour.

In the event of an accident, the captain of the apparatus is responsible. The driver is protected by ordinance granting the right of way to fire apparatus and representation by city legal staff.

We do not have fire lanes. Where policeman is at intersection, he attempts to direct and clear traffic for fire apparatus.




FIREMEN WEARING SCOTT AIR-PAKS LOCATE SOURCE OF FIRE IN CLOSET UNDER STAIRS. QUANTITIES OF BURNING FEATHERS, PAINT, SILK, WOOL, ETC. CREATE DANGEROUS TOXIC CONDITION....BUT FIRE IS PROMPTLY DEALT WITH



Here's how Scott Air-Pak Safety Breathing Equipment helps you fight fires SAFER and FASTER

- Safely protects you from all toxic fumes.
- Inspires confidence (ample supply of cool fresh *air* — not oxygen).
- Immediate building entry regardless of smoke makes possible attacking fire at source.
- Lungs and eyes protected, firemen work efficiently and comfortably.

ESTABLISHED IN 1932
Scott
FOR SAFETY—FOR SERVICE

See your Scott Distributor for FREE DEMONSTRATION or write us for full information — today!

Have You Seen the NEW Scott DEMAND OXYGEN Inhalator?

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CANADA: SAFETY SUPPLY CO. BRANCHES IN ALL PRINCIPAL CITIES
EXPORT: SOUTHERN OXYGEN CO., 157 Chambers St., New York 7, N. Y.

Obituaries

Chief A. A. Hanson Dead

Arthur A. Hanson, 58, chief of the Westwego, La., Volunteer Fire Company No. 1, died March 13 at his residence, 227 Sala, Westwego.

A native of Chicago, Chief Hanson was treasurer of the Louisiana State Firemen's Association for 25 years and president of the Westwego Volunteer Fire Company No. 1 for 10 years. He had been chief for two years.

He was one of the organizers of the Westwego Volunteer Fire Company No. 1 and was also an organizer and first commodore of the Lafitte Yacht Club.

Chief Hanson was a member of the Jefferson Parish Firemen's Association and a former member of the Jefferson parish school board.

Manager of Klause's restaurant in Westwego for many years, he had retired from business but still was active in Westwego and Jefferson parish civil affairs.

He is survived by his widow, the former Miss Gertrude Adams; a brother, Henry Hanson, Ocala, Fla.; and two half-brothers, Emil Lindberg, Baton Rouge, and Albert Lindberg, Chicago.

Chief A. W. Spring Dies

A. W. Spring, 78, who served as Chief of the Laconia, N. H., Fire Department for 45 years, died March 14, 1951, at his home. He retired from active service two years ago.

Chief Spring joined the Laconia Hook & Ladder Co. as a volunteer in 1898 and was made chief six years later. He also served as a forest warden for 35 years and for many years he acted as building inspector. In addition to these duties he served as overseer to the poor for three years. In 1916 he represented Ward 6 in the State Legislature.

Chief Spring was president of the New England Association of Fire Chiefs in 1947 and 1948. He also served as president of the New Hampshire Fire Chiefs Association and he was an active member in the International Association of Fire Chiefs.

On his retirement two years ago, he was presented a scroll and purse of money in behalf of local friends. He was a past president of the Laconia Chamber of Commerce and past exhalted ruler of the Elks and a past grand knight of the Knights of Columbus.

Survivors include his wife, two sons, two daughters. A brother, Jeremiah, is a member of the Manchester, N. H., Fire Department.

Ex-Chief of Santa Monica Dies

William J. Mohr, 70, former head of the Santa Monica, Calif., Fire Department, and past president of the Pacific Coast Fire Chiefs' Association, died March 19th.

Chief Mohr who was widely known and liked, retired eight years ago after 39 years of service in the department. He was made chief in 1927. He was also past president of the Santa Monica Rotary Club, a member of Elks Lodge 906, Santa Monica, and was active in Masonic and civil affairs. He leaves a widow, a son and a daughter.

Charlottesville Fire Chief Monoxide Victim

Charles H. Page, Chief of the Charlottsville, Va., Fire Department since 1942, was found dead in his automobile, March 9, 1951. Death was apparently caused by carbon monoxide poisoning, police said. He is survived by a son, a sister and a brother.

Edwin L. Ballard Dead

Edwin L. Ballard, 68, technical adviser to the Buffalo, N .Y., Fire Department since 1946, died Feb. 18, 1951, in his home, 68 Beverly Road, Buffalo.

Mr. Ballard, also a member of the New York State Fire Advisory Board, Division of Safety, came to Buffalo in 1913 as a resident engineer for the Eastern Inspection Bureau, New York City. He retired as a fire protection engineer in 1946 and was then named to the Buffalo Fire Department post.

PAUL C. DITZEL

E. W. Beck Dead

Ernest W. Beck, 65, supervisor of safety for the United States Rubber Company, died in Rockville, Conn., March 11, 1951, after a long illness. He lived in Leonia, N. J.

During World War I he was superintendent of training for the U. S. Shipping Board Emergency Fleet Corp. He joined the U. S. Rubber Company in

YOU CAN HAVE
To-morrow's Pumper To-day

Recent delivery to Merion Fire Co., Ardmore, Pa., of an advance design combination Fire Apparatus, High Pressure Fog, Fog Foam, Wet Water, Foam, Electric generator and flood lights, Acetylene Cutting outfit, Emergency Rescue equipment, two 250 foot lengths of Booster Hose on Electric Drive Reels, Hand Portable Extinguishers, etc.

This ultra modern apparatus carries 500 gallon water, 40 gallon Foam Liquid, 10 gallon Wet Water, "Hardie" 3 cylinder 800 P.S.I. High Pressure Pump and Fog Guns.

Instant one valve control from Fog to Foam or Wet Water. Apparatus can be effectively used in Civil Defense for gas and Bacteriological attack, even to help combat radiation in event of aerial attack.

Why buy already outmoded apparatus when we can give you today the kind you will eventually buy.

EDGAR ROAD TANK WORKS
LINDEN NEW JERSEY
NOT HOW MUCH BUT HOW WELL
U.S.A.
SQUAD TRUCKS
PUMPERS
AIRPORT CRASH TRUCKS
INDUSTRIAL FIRE TRUCKS
HIGH PRESSURE FOG ENGINES

1920 as a member of the industrial relations department, in New York City, and he had been supervisor of safety since 1925.

Mr. Beck was one of the organizers of the Greater New York Safety Council, the Metropolitan Chapter of the American Society of Safety Engineers, and the Veterans of Safety.

Surviving are his wife, two daughters and three brothers.

Persons in the News

Fire Commissioner Sweeney Resigns

Fire Commissioner William Sweeney of Attleboro, Mass. resigned his post March 1, 1950, to reside in Chatham, Mass., on Cape Cod. Besides serving as commissioner he was Call Assistant Chief of the fire department.

Chief Karn of Kitchener Retires

Fire Chief Phillip H. Karn retired as head of the Kitchener, Ont., Fire Department on December 31, 1950.

Kenneth R. Putnam has taken over the post as fire chief. The new chief has had 22 years' fire fighting experience, the last six as an officer of the department. He also served on the executive board of the Provincial Federation of Ontario Fire Fighters from 1941 to 1949 and in 1950 was elected to the office of president.

Chaplain Brown, NYFD, Honored

Over 750 members of the New York Fire Department St. George Association and guests, including Fire Commissioner George P. Monaghan and Fire Chief Peter Loftus, gave Rev. Robert A. Brown, the department's Protestant Chaplain, a testimonial dinner, marking his 20 years of service in the department. The dinner was held in the Plaza Hotel, February 5th. The chaplain, who is also rector of the Grace Protestant Episcopal Church in Corona, Queens, is a founder of the St. George Association. He was appointed by the late Mayor James J. Walker in 1931.

Hutson and Just to Conduct Surveys of New York Fire Department

The New York City Board of Estimate in March authorized a number of surveys of the city's services to cost over a quarter of a million dollars. Funds for the first four of the studies were appropriated to cover Fire, Police, Welfare and Health. Studies will be under the general direction of the Mayor's Committee on Management Survey.

The fire department survey reportedly will cover "special operations," at a cost of $39,000 and will involve firehouse relocations, fire prevention, and the training of firemen, as well as "reorganization of business management of the department." Tentative completion date is September 1, 1951.

This survey will be directed by A. C. Hutson, retired Assistant Chief Engineer of the National Board of Fire Un-

Another Hannay Installation

It's the New

New Autocar Fire Truck of the Merion Fire Company, Ardmore, Pa., equipped by the Edgar Road Tank Works, Linden, N. J., with the new Hannay Hose Reels.

HANNAY HOSE REEL

WATER-RESISTANT
VAPOR-RESISTANT
EXPLOSION-PROOF

New models for fire trucks and airport crash trucks are especially designed with extra strong construction to withstand high pressures and the motor is protected against fog, foam, water and fumes. Developed to overcome the danger factors previously associated with electrical rewinds, the Hannay Reel has been PROVEN SAFE and efficient in exacting factory and field service tests. Explosion-proof, heavy duty motor with permanently lubricated bearings is Underwriters Approved Class 1, Group D, and is an integral part of the reel; needs no attention.

- **Can be connected through conduit, for sealed, safe installation.**
- **Sealed push button control; "push" to start; "release" to stop.**
- **Quiet, positive sprocket and chain drive; no gears to shift; no clutch to engage.**
- **Safe rewind speed, always under control.**
- **Smartly designed, compact, durable, dependable.**
- **Simplicity of construction and operation reduces maintenance costs to a minimum.**

ASK YOUR SUPPLIER
or write direct for full information.

HANNAY HOSE REELS
REG. U.S. PAT. OFF.
CLIFFORD B. HANNAY & SON, INC.
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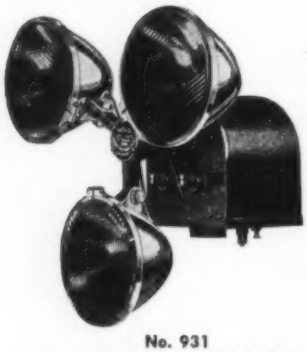
No. 930 Junior Type Roto-Rays



No. 931
Large Type Apparatus Roto-Rays

SEEING IS BELIEVING!

And these powerful Buckeye signals leave no doubt in the minds of pedestrians and motorists that official vehicles are on the way!

The revolving red lights of the Roto-Rays cut through the glare of street lights, giving the exact location of your apparatus and the direction in which it is traveling.

Likewise, the Buckeye Moto-Ray provides positive identification of emergency vehicles by day or night, throwing its strong red beam from left to right 40 times a minute.

No. 950 Moto-Ray

Buckeye
FIRE DEPARTMENT ACCESSORIES

BUCKEYE IRON & BRASS WORKS • DEPARTMENT E
P. O. BOX 883, DAYTON 1, OHIO

Central 500-Gallon Equipment Mounted on International Chassis Recently Delivered to City of East St. Louis, Illinois

CENTRAL FIRE TRUCK CORP.
4437 Manchester Avenue, St. Louis 10, Missouri

derwriters who, since leaving the Board, has been actively engaged in consulting work involving fire protection and fire prevention in this Country and abroad.

The study of the training program of the fire department is being made by Chief James W. Just, member Western Society of Engineers and Director of Fire Service Training for the State of Maryland. It is understood that Chief Just's report will include recommendations for possible improvements in the department's long established fire school and college procedures.

Chief Just is vice-chairman of the Committee on Firemen's Training of the N.F.P.A. and has been widely identified with fire service training for twenty years. He is one of the original seven men who founded the Fire Department Instructors Conference, the 22nd session of which was held in Memphis last January.

Saskatchewan Fire Chiefs Organize

At a conference of fire chiefs held at the fire commissioner's office in Regina, Saskatchewan, on January 5th, 1951, the Saskatchewan Association of Fire Chiefs was formed, with Chief T. G. Lennon, of Saskatoon, president. Other officers of the new body are: Chief W. L. Cook, Moose Jaw, vice-president, and Chief W. S. Winton of Estevan, secretary-treasurer. The three members making up the Board of Directors are: deputy fire commissioner R. A. W. Switzer, Chief A. Turner, Prince Albert, and Chief Len E. Owen of Whitewood.

At a meeting of the Board in Regina on February 28th, it was decided to accept the invitation of His Worship J. M. Cuelenaere to hold the Association's first annual convention in Prince Albert. The dates set were June 26, 27 and 28. Secretary Winton reports an excellent program of speakers is being prepared and this, together with other features, not excluding the scenic beauties of Prince Albert and the famed hospitality of that City and the host fire department headed by Chief Turner, should result in the new Association getting off to a flying start.

Full particulars about the organization, and its scheduled conference may be had from Chief Wm. S. Winton, secretary-treasurer, Saskatchewan Association of Fire Chiefs Estevan, Sask.

Train Wreck

(*Continued from page 279*)

the wreckage or picked up by volunteer firemen rescue workers. As the magnitude of the tragedy became known, police broadcasts brought more and more rescue companies and emergency squads rolling in with needed lighting, cutting, forcible entry and other equipment, and personnel trained in emergency first aid work. That the nation's worst railroad wreck since 1918 wasn't a greater tragedy is due mainly to their efforts.

That section of New Jersey had learned a lesson after the South Amboy experience. Hospitals were better prepared. The fire service was less inclined to dispatch equipment without first knowing what was needed, and how much of it was needed. When the accident occurred, communities in the area were already at work setting up im-

provements in the existing mutual aid program. The greatest need, it is said, is for improvements in communications and control and direction of authority. The greater the disaster, the more services respond, and the greater the possibilities for confusion in direction and authority.

At a fire the chief in charge of the area has authority, absolute and unequivocal. However, at emergencies apart from fire, involving the fire service, such as train wrecks, the question of the jurisdiction and authority of the fire chief is in doubt, at least in some states. But there can be no doubt as to the place of the fireman in the minds of victims of such disasters, who see in the welcoming helmet and uniform of the fireman the needed aid at a time when help is so paramount.

The victims of the Woodbridge tragedy will long remember the volunteer firemen and fire rescue units who met the emergency without hesitation, who labored in the drizzle, the mud and the debris, all through the night of Feb. 6th.

There isn't room in this issue of FIRE ENGINEERING to list all those responding fire and rescue units—and those that stood fast to cover the areas left uncovered by the rush to the rescue at Woodbridge, even if the total number were known.

Questions and Answers

Parallel Lines of Unequal Diameters

To the Editor:

In your book, "Fire Service Hydraulics" appears the following problem:

One engine is pumping through 1,800 feet of 2½-inch rubber-lined hose and another is pumping through 1,800 feet of 3-inch rubber-lined hose. These two lines are siamesed into a single line of 2½-inch hose 100 feet in length, equipped with a 1¼-inch nozzle.

The pressure at each engine is 200 pounds. What is the nozzle pressure?

To convert the siamese lay of line, you first use the factor 2.6 to change the 3-inch line to 2½-inch. Then the two 2½-inch lines are averaged, and the factor "L" was found to be 10.9.

I would like to know why the factor 6.1 (factor for changing one 2½-inch and one 3-inch line of equal lengths to a single line of 2½-inch hose) cannot be used in this problem. We have tried this in the engine house, but the factor "L" comes out to be 9.9.

H. O. L.

Answer: The factor 6.1 may be used where the lines are equal in length. This factor gives a more accurate result than the method employed in the problem you cite.

However, the use of this factor has one fault. It can only be employed where the lines of unequal diameters

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The improved Powhatan "Sensible-Lug Couplings" are precision tooled and manufactured of only the best high grade materials. They set a standard that is "tops" in this specialized field of fire-fighting equipment. The curved surfaces of this modern coupling enable the hose to glide easily over all obstructions, thus preventing snagging, an important safety and economical feature appreciated by those who know.

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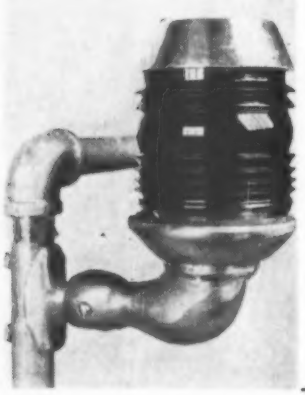

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360 Degrees of RED LIGHT

This genuine fresnel light shines like a lighthouse beacon! It has the very same type of lens. Here is the answer to ALL AROUND fire truck protection.

Ball and socket bracket permits four different mounting positions on vertical or horizontal hand rails. Mounted on the horizontal rail, it will clear ladders and hose. Aerial trucks need two to a side.

Use them in pairs. Alternating flasher operates 21-32 CP bulbs.

$30.00 a pair with alternating flasher.
$16.00 each with 50 CP bulb and flasher.

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are of equal length. As long as the lines are of equal length, the factor 6.1 can be used. But where lines are being supplied by different pumpers, frequently the longer stretches are of larger diameter hose to take care of the problem of keeping friction loss down. In that case, the method employed in "Fire Service Hydraulics" would be used, for it is applicable to any problem involving different lengths of hose and different diameters.

Standpipe Calculations

To the Editor:

A pump is supplying a standpipe through two 2½-inch hose lines, each 200 feet long.

Line "A," consisting of 150 feet of 2½-inch hose and nozzle with a ⅞-inch tip, is taken from the fifth floor standpipe outlet and used on this floor.

Line "B" of similar size, length, and nozzle tip, is taken from the sixth floor standpipe outlet and remains on the sixth floor.

With both lines in operation: (1) What engine pressure is required to maintain a nozzle pressure of 50 pounds for line "A"? (2) With the engine pressure so found remaining unchanged, what nozzle pressure would result for line "B"?

S. M. F.

Answer: The first step is to find the pressure at the standpipe outlet which supplies Line A.

Engine pressure is equal to nozzle pressure × (1.1 + KL).

Nozzle pressure is 50 pounds.

K, for a ⅞-inch nozzle on ½-inch line of hose, is .016.

L, the number of 50-foot lengths of hose in the line, is 3.

Then E.P. = $50 \times (1.1 + .016 \times 3)$
$= 50 \times 1.148$
$= 57.4$ pounds.

Assuming 12 feet per floor, the pressure at the outlet on the sixth floor will be $57.4 - (12 \times .434) = 52.2$ pounds.

Using this pressure as engine pressure, solve for the nozzle pressure on Line B.

Engine Pressure = 52.2 pounds.

Nozzle Pressure
$= E.P. \div (1.1 + KL)$
$= 52.2 \div (1.1 + .016 \times 3)$
$= 52.2 \div 1.148$
$= 45.5$ pounds

The discharge from the nozzle on Line A will be:

Discharge $= 29.7 \times d \times d \times \sqrt{P}$
$= 29.7 \times ⅞ \times ⅞ \times 7.07$
$= 161$ gallons per minute.

The discharge from the nozzle on Line B will be:

Discharge $= 29.7 \times .875 \times .875 \times \sqrt{45.5}$
$= 29.7 \times .875 \times .875 \times 6.74$
$= 153$ gallons per minute.

The total discharge from the two nozzles will thus be 161 + 153, or 314 gallons per minute.

Next combine the two 200-foot lines from the engine to the standpipe connection into a single line of 2½-inch hose. The conversion factor is 3.6.

$200 \div 3.6 = 55.56$ feet of 2½-inch hose, single line.

The friction loss in 100 feet of 2½-inch hose for a flow of 314 gallons per minute $= 2 \times Q \times Q + Q$, where Q

is the flow in hundreds of gallons, or $2 \times 3.14 \times 3.14 + 3.14 = 22.86$ pounds.

The friction loss in 55.56 feet will be $.5556 \times 22.86$, or 12.7 pounds.

The back pressure in the standpipe to the fifth floor ($4 \times 12 \times .434$) equals 21 pounds approximately.

The friction loss in the standpipe is taken as 25 pounds as an average.

Then the engine pressure equals standpipe outlet pressure + friction loss in standpipe + back pressure in standpipe + friction loss in parallel 200-foot lines of hose, or 57.4 + 25 + 21 + 12.7, or 116.1 pounds.

Should the nozzle pressure on Line B be 50 pounds, and this were solved first, then we would find that the pressure at the outlet of the standpipe on the fifth floor would be greater by the amount ($12 \times .434$) which is the back pressure for one floor elevation. Thus the pressure at the outlet on the fifth floor would be that amount greater than the pressure at the outlet on the sixth floor. The nozzle pressure on Line A would be solved by using this higher outlet pressure in solving for nozzle pressure.

Parallel Lines

To the Editor:

Please send me some information on lines siamesed together. A nozzle is placed 400 feet from the pumper, using a 1-inch tip and a nozzle pressure of 60 pounds. Is it better to have the line siamesed 100 feet from the pumper and 300 feet from the tip or 300 feet from the pumper and 100 feet from the tip? I have heard that by using the siamese close to the pumper you would have the same pressure at the tip, with less friction loss. However, I believe the opposite is true, namely, that the closer the siamese is to the tip, the less friction loss.

W. R. F.

Answer: Normally the siamese is made near the nozzle in order to reduce excessive friction losses. This is particularly the case where a large diameter nozzle at high pressure is to be employed.

In some instances, however, the stretch is long, and there will not be enough hose on one unit to stretch parallel lines a major part of the distance. In this case, use all the hose available to get best results; parallel lines are run as far as the supply of hose will permit, allowing enough for the single stretch to the fire.

It is possible to pump through a layout of parallel lines approximately two and a half times the length of a single line, where engine and nozzle pressure are to remain the same. Putting it in another way, friction loss in parallel lines of 2½-inch hose for a given flow is approximately one-quarter of that (per hundred feet) of a single line of 2½-inch hose for the same flow.

New C.D. Communications Head

Col. William M. Talbot, retired Air Force officer, was named in March as director of the new warning and communications division of the Federal Civil Defense Administration.

Special construction gives PYRENE Vehicle Type Extinguishers

AT LEAST TWICE THE SERVICE LIFE OF ORDINARY VAPORIZING LIQUID EXTINGUISHERS

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Exclusive!
Vibration dampener protects pump mechanism.
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PYRENE (Vehicle Type)
In vibrating machine tests, Pyrene outlasts others up to 15 to 1.

A special vibration dampener holds the Pyrene pump mechanism firmly in place, protecting it against both vertical and horizontal vibration. And tough brass linings guard the valve housings in every spot where wear would occur. *No other extinguisher offers these vital added construction safeguards.*

In competitive vibrating-machine tests (the most rigorous of such tests known) a Pyrene Vehicle Type Extinguisher outlasted three other major brands by more than 2 to 1 . . . the ratio going as high as 15 to 1. (Chart shows details.) And there is not one single known instance of the Pyrene heavy-duty mechanism wearing out in actual operation.

Lower price doesn't pay when you get half the life! Buy on facts . . . buy Pyrene!

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With Our Readers

Investigations Show Sprinklers Were Shut Off

To the Editor:

Concerning your article "Sprinkler Failure and Delay in Alarm Contribute to Costly Fire," in the February issue of "Fire Engineering," we give you below the following report which we have just received from a group of Insurance Carriers who are interested in the Florence Stove Co. risk of Kankakee, Ill.

It is their opinion that "if the sprinklers had been in service at the start of the fire on January 1, 1951, that the blaze would have been extinguished by the operation of a few heads."

They also remark that your story reflects in several places the type of preliminary information given out soon after a fire. Their engineers spent many days and nights at the property and developed different information. It now appears that the fire when first discovered by the watchman was at and in the dry pipe valve enclosure. It is believed to have started as a result of leaking propane gas following the underground feed main into the building and dry pipe enclosure where it was ignited by the hot plate used to heat the enclosure.

It also appears that the watchman sounded the alarm promptly on the plant loudspeaker system and returned to attack the flames. He was soon joined by another watchman who brought the plant mobile pumper to the scene. In the meantime, the plant Engineer called the West Kankakee Fire Department, started the Fire Pump, and then called the Kankakee Fire Department, all in the order named. There is no positive evidence that anyone checked the sprinkler controlling valves or saw water coming from the heads over the fire.

Evidence developed by these insurance engineers indicates that the indicator post gate controlling the sprinklers over the area in which the fire started was shut at the start of the fire and that the valve was not open at any time during the fire. Statements were made to these men that the valve had been closed for several weeks. Other persons denied such allegations. The insurance engineers, however, are of the opinion that had the automatic sprinklers been in service when the fire started, the blaze would have been controlled by a few automatic sprinklers.

Miss A. D. Bosch, *Secretary*
National Automatic Sprinkler and Fire Control Association

Editor's Comment: The Staff Report of the Florence Stove Company fire in West Kankakee, Ill. on New Year's night, 1951, as stated in the credit footnote to the text, was based upon information supplied by Fire Chief Roy Marquart of the Kankakee Fire Department. His report was checked at the time with press reports which agreed in practically every detail with the data from Chief Marquart.

For the benefit of our readers, accounts of fires or other incidents prepared by the staff of this Journal and signed "Staff Reports," are very rarely based upon "preliminary information" in the form of newspaper or other published material. It is an invariable practice to substantiate in every possible way such data and the source for substantiation to which the staff first turn is the fire chief or other officer who was in command at the time. Where the occasion warrants, if time permits, any questionable or doubtful details are reviewed and checked with other authorities. As your Association knows, manifestly it is impossible to defer publication of all accounts until final investigations have been completed by insurance and other investigation bodies. Sometimes these post-incident studies take many months. Your letter does not state from just what "group" of insurance carriers your reports have come but for your information we would advise that we are privileged to have the copy of the formal report made on this fire by the Engineering Department of one of the foremost such insurance groups. We take the liberty of quoting from that report.

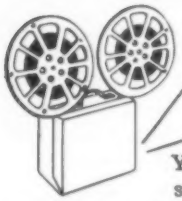
Concerning sprinklers the engineers state: "Evidence indicates the automatic sprinklers were not in service in the area where the fire started." And later: "The building was fully protected with automatic sprinklers supplied from two gravity tanks and fire pump."

Reporting on the origin of the fire they state: "Propane gas leaking from a nearby buried pipe followed underground sprinkler piping into the warehouse where it ignited at a hot plate used to heat the dry-pipe valve enclosure."

Bearing further upon the reason why

SHOW THIS MOVIE FREE

SAFE EXIT



You can do a fine educational job in behalf of safety with "SAFE EXIT," a 20-minute, 16 mm, black and white sound movie, prepared for you to show *absolutely free* by the makers of Von Duprin Fire and Panic Exit Devices.

"SAFE EXIT" is a true public service film—not a product story at all—dramatically filmed and edited for the layman to understand—and benefit by. Ideal for use in your training program—for the luncheon club or PTA meetings on your schedule.

You pay nothing—not even postage—to show "SAFE EXIT" in your community. Simply fill out and mail the handy booking request below.

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VON DUPRIN DIVISION
Indianapolis 9, Indiana Date.....

YES, we wish to show the 16 mm, sound, B & W movie, "SAFE EXIT."

Date Desired:..... or .....
(PLEASE LIST ALTERNATE)

Type of Audience:.....
(SCHOOL, LUNCHEON CLUB, TRAINING, ETC.)

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We understand film is absolutely rent-free, postage paid.
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sprinklers did not operate, the report says: "Investigations following the fire indicated that the IPG valve controlling the sprinklers in the section of the warehouse where the fire started, had been shut off for several weeks because of the need of minor repairs to the system; and that the underground gas piping system was a continuous source of leaks."

The conclusions drawn from this fire, and loss of sprinkler protection as given by these engineers, are in the main repetitions of other similar lessons to be learned where, for one reason or another, the sprinkler protection upon which a plant or other installation, and the fire department relies, fails for whatever reason. For the benefit of our readers we quote these conclusions of their report: Speaking of the shutting off of the sprinklers in the plant, the engineers say: "The cause of this can be attributed to negligence and poor management." And as lessons to be learned from the fire, they are equally conclusive: "(1) The importance of keeping sprinkler controlling valves open at all times; (2) the importance of responsible authority for inspection and maintenance of plant protection equipment; (3) the dangers of making flammable gas or liquid system installations without first requesting advice from insurance carriers or other recognized authorities on the subject, and (4) the importance of notifying insurance carriers of impairments to sprinkler systems.

Checking this information with our published story we cannot see where we have deviated from the facts about the sprinklers as presented by Chief Roy Marquart, or the above quoted insurance group authority, which, incidentally praises the "good work done by all participating fire departments in confining the flames to the building of origin."

As to delayed notification of the fire forces, we have Chief Marquart's word that there was a 20 minute delay in his department's receiving notification.. We stand by the fire department records on this score. Nor will we question your own, and your insurance group's statement, that had the sprinklers been in operation the fire would have been extinguished by the operation of a few heads."

Smoking in Bed

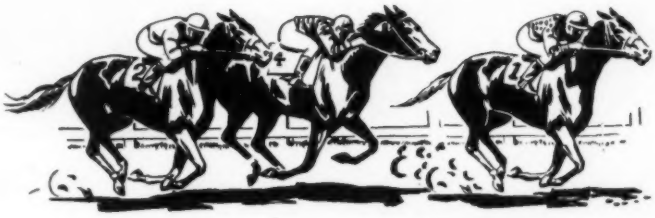
To the Editor:

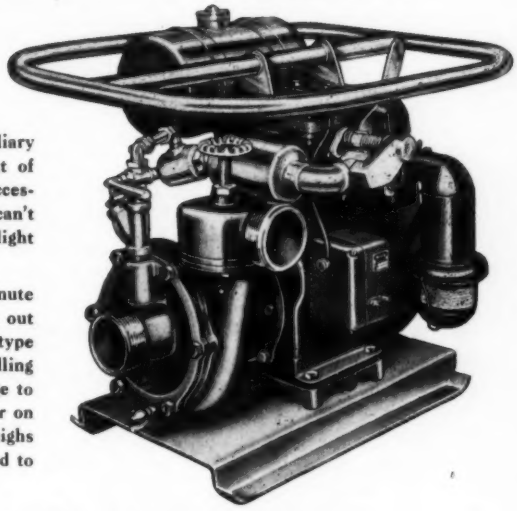
It is somewhat discouraging to fire chiefs, fire marshals and everyone concerned about public safety, when our movie producers undo any good work these officials may do. We have preached and preached not to smoke in bed, and no doubt some good results have been attained, yet I viewed a movie last night where movie actors, under the influence of spirits, smoked in bed.

This, in my opinion, encourages smoking in bed, as the public is quick to act on what it sees done. I believe it is time we asked the cooperation of studios not to show actors smoking in bed. It is a form of adult delinquency.

During Fire Prevention Week we displayed in our leading hotel lobbies charred beds and bandaged dummies showing the result of smoking in bed. Is it too much to ask our movie studios to discontinue these pictures of smoking in bed? I believe some good can come of asking movie producers to discontinue

Best of the field!





This compact 3XD auxiliary booster pump is out in front of all others as an important accessory on every fire truck. It can't be beat for dependable top flight performance.

Delivers 300 gallons per minute to booster tanks . . . pumps out basements . . . centrifugal type construction allows the handling of dirty water without damage to pump . . . saves wear and tear on expensive apparatus . . . weighs but 125 lbs. and can be carried to any source of water supply.

We are also the manufacturers of the Barton-American UA-50 Front Mounted Fire Pump and the DMA Duplex Multi-Stage Midship Mounted Fire Pump for truck duty.

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IN CANADA: C. E. HICKEY & SONS, LTD., HAMILTON, ONTARIO

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For *Volume* and *Pressure*

Specify HALE

HALE FIRE PUMPS are built in all STANDARD CAPACITIES

VOLUME *and* PRESSURE are both vital in controlling or stopping disastrous fires.

Firefighters who have used Hale FIRE Pumps *know* they can depend on a HALE for the right volume and the right pressure to fit a wide range of tough fire-fighting conditions.

In other words, they have learned through first-hand experience to appreciate a Hale's flexible range of performance and high efficiency.

Make sure of dependable *Volume* and *Pressure* in your next piece of apparatus by insisting on a Hale Fire Pump.

Write today for up-to-date bulletins on HALE FIRE PUMPS; they are built in all standard capacities.

HALE FIRE PUMP COMPANY
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Take better care of your fire hose!

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and in short supply

Patented

Don't gamble your $1.60 hose against damage from mildew and rot, protect it with CIRCUL-AIR, the electrically operated HOSE DRYER which circulates pre-warmed fresh air through coiled wet hose at the rate of 5 to 6 air changes per minute. CIRCUL-AIR is designed to lengthen hose life; improve the appearance and functional design of new fire houses; and to save floor space and hard work. NO OTHER METHOD is so fast—so easy to use—so economical.

NEW HOSE DRYING MANUAL
TELLS HOW TO DRY, STORE
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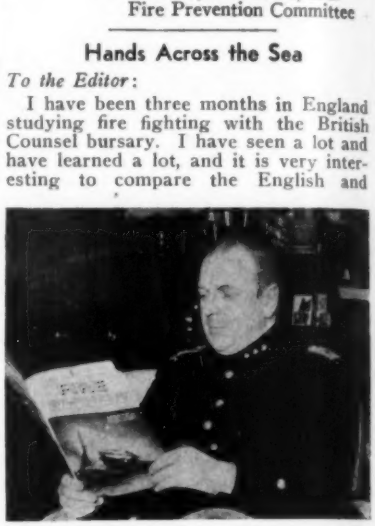
this type of picture, and go to greater lengths in having actors get out of bed to smoke. Maybe we can further eliminate this criminal habit of smoking in bed and save more lives.

J. R. MOSHER,
Member, Evansville, Ind.
Fire Prevention Committee

Hands Across the Sea

To the Editor:

I have been three months in England studying fire fighting with the British Counsel bursary. I have seen a lot and have learned a lot, and it is very interesting to compare the English and



Chief Karl Astrom

American fire services. My opinion is that both services have a lot to learn from each other. To me it seems a pity that greater collaboration does not exist. The rest of the world could benefit by it.

The photograph shows that my best litrature is FIRE ENGINEERING and it is going to be continued (in our fire force).

KARL ASTROM
Chief, Helsingfors, Finland

Note—Chief Astrom made a host of warm friends in this country when he spent considerable time "stateside" to learn about the American methods and equipment. He asks to be remembered to his old friends, particularly those in the New York Fire Department.

Wants Old Spring Raise Aerials

To the Editor:

We are interested in the purchase of two used aerial ladder fire trucks equipped with 65'—85' spring actuated extension ladders.

This equipment will be employed as portable towers in conjunction with a survey we will conduct to determine permanent sites for towers for a microwave radio communication system.

In the event you have knowledge of such equipment which may be located in the midwest states area, would appreciate names of individuals we may contact.

BUYER
Great Lakes Pipe Line Co.
P. O. Drawer 2239
Kansas City 13, Mo.

How to Cook Kerosene—as Done in Tel-Aviv!

To the Editor:

On the 10th of March, we were called to a fire in the residential area of Tel-Aviv (pop. 350,000), and when we arrived at the fire we found in the kitchen

that the kerosene stove was on fire.

The fire was extinguished and when I started to look for the reason for this fire I found that the *kerosene stove had been placed on top of an electrical heating and cooking range.*

The switch of the range was "on" and so the kerosene started to boil, and it ignited. When I asked the lady of the house how she happened to leave the current in and to place the stove on the electrical range, she told me that she was sure that the current was cut off. (Owing to a breakdown at the local power station, the electrical company published a notice to the public not to use current in the morning for cooking, so the lady was sure no current was "on").

I think that the above mentioned method of cooking is a very good and quick one—or is it,

M. HARTMAN, Chief Mechanic for
A. Kaspi, Fire Chief, Tel-Aviv.

Tel Aviv, Israel,
March 15, 1951

British Firemen Seeks American Correspondent

To the Editor:

I am just an ordinary British fireman stationed at the County Town of Maidstone. Whilst on night duty the other night I came across some old copies of your excellent magazine FIRE ENGINEERING, the first I had seen.

Discussing them with some of the chaps, we wondered if through FIRE ENGINEERING it would be possible to contact a fireman or fire station who would care to exchange magazines with us. We have as you no doubt are aware, a monthly magazine called "Fire" and a Quarterly Brigade Magazine called "Kentish Life." I could also send weekies such as "John Bull," "Picture Post Illustrated," "Everybody's" and "Sporting Record" or would be pleased to send any specially requested.

Hoping you will be able to oblige me in some small way . . .

G. D. FOSTER,
8 Orchard Estate
Cranbrook, Kent, England

Editor's note: Perhaps one of our readers, or a group from some American fire station, will write Brother Foster, mentioning this publication of his letter.

What's Burning

THE following list includes fires of $10,000 loss and over in the United States and Canada for the month of March, 1951.

Month Ending March 31, 1951

Sarnia, Ont.—Bldg. on North Front Street including pet shop owned by Mrs. Durban Nacy, Burrowes Knitting Shop, Parsons China Gift Shop, offices of Harris & Co., stock brokers; Academy Billiards, Clement Drug Store, offices of Taylor, Jamison, Knox & Fowler, destroyed. Adj. bldg. occupied by Custom Motors, Ltd., a linoleum company and the Lambton Loan & Investment Co., heavily damaged.

Vancouver, B. C.—Vancouver Apartments, destroyed.

Marion, Mich.—Marion Creamery damaged.

Natchez, Miss.—Jordan Automobile Co. destroyed.

Gladwin, Mich.—Schwager dept. store, Margie bldg., destroyed. Defective oil furnace.

Hutchinson, Minn.—Niebler's meat market and frozen meat locker plt, Red Owl grocery store and Hartwig apron shop destroyed.

We're in this, too!

For many years we have supplied distinguished badges to Fire Departments everywhere. Now we are prepared to help you meet the needs of your

AUXILIARY AND RESERVE UNITS

All of us here will give your inquiries prompt, courteous and efficient attention.

Buy where you have confidence—

Buy at EVERSON-ROSS
88 CHAMBERS STREET NEW YORK 7, N. Y.

Another BOYER!
CUSTOM BUILT apparatus recently delivered to Castle Shannon, Penna.

BOYER FIRE APPARATUS CO.
LOGANSPORT, IND.
ESTABLISHED OVER 70 YEARS

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Available in a Complete Range of Power and Pumping Capacities

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ROANOKE 16, VIRGINIA

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STERLING, for years has combined highest quality materials with precision manufacturing to provide sirens that will operate reliably year after year without failure. There's a STERLING Siren for every emergency use.

FOR EMERGENCY VEHICLES
Model 20 SIRENLITE • Powerful Flashing Beam • Smooth Operation • Streamlined • Chromium Finish • Dependable Service

FOR VOLUNTEER FIRE ALARM SYSTEMS
Model M SIREN • Big • Rugged • Powerful • Dependable • Quick Accelerating • Highest Quality Material Used

Complete Line of Siren Equipment Available. Bulletin on Request.

THE STERLING SIREN FIRE ALARM CO., INC.
58 Allen St., Rochester 6, N. Y.

Hubbard, Ohio—Central Christian Church destroyed. Overheated gas burner.
Portland, Ore.—Citizen's First National Bank damaged. Explosion gas main.
Mount Hood, Ore.—Hill's Cafe destroyed.
Philadelphia, Pa.—Kayler Co. damaged.
Houston, Tex.—Whse. of Stewart & Stevenson Services, occupied by engines for the Army, destroyed.
Grimsby, Ont.—Peach King Arena, dressing rooms, offices, and concession stands, destroyed.
Montreal, Que.—Hardware Store of Vibralite Eastern Ltd. damaged.
Los Angeles, Cal.—California Metal Shaper Co. damaged.
Wilmington, Dela.—Michener Bros. Chevrolet dealers, destroyed.
Ocala, Fla.—The Margaret Ann Super Market destroyed.
Benton Harbor, Mich.—Dwelling of David J. Ross, Benton township, Berrien County, destroyed. Defective wiring.
Perth Amboy, N. J.—Washington Park baseball grandstand destroyed
Syracuse, N. Y.—A plt. of the U. S. Hoffman Machinery Corp., destroyed.
Ottawa, Ohio—Parker Buick Sales garage, three new cars and eight used cars, damaged. Coal gas exploded the furnace.
McMinnville, Tenn.—McCollum Drug Store, Rust Hardware and Tire Store, Pollard's Barber Shop, destroyed.
St. Augustine, Fla.—City bldg. damaged.
Baltimore, Md.—Stores occupied by Wise Shoe Co. and Morton Cohen's women's apparel shop, damaged.
Owosso, Mich.—A 400-foot section of the three block long Midwest Abrasives Co., damaged.
Cape Girardeau, Mo.—Bldg. occupied by Lorbeg Appliance Co. destroyed.
Clayton, Mo.—Twelve-unit apt. bldg., Wellington Way, damaged.
New Madison, Ohio—Grain elevator at Clark's station, destroyed.
East Toledo, Ohio—St. Paul's Episcopal Church, damaged.
Vivian, S. D.—Tri-State grain elevator destroyed.
Okanogan, Wash.—The Okanogan Hotel destroyed.
St. Catherines, Ont.—Robertson Storage and Removal whse. damaged.
Putnam, Conn.—The Elks Bldg. and adj. Citizen's National Bank Bldg., damaged.
Eldora, Ia.—Bldg. occupied by State Boys Training School destroyed.
Grand Rapids, Mich.—Peter Zoodsma shoe store, Kuk's Kafe and Jacob Tuinstra flower shop destroyed.
Orillia, Ont.—Cavana-Watson bldg. damaged.
Petitodiac, N. B.—Mann's garage and radio repair shop destroyed.
St. Joseph d'Alma, Que.—Alma-Jonquiere railway shed destroyed.
Fort Payne, Ala.—Service Cleaners plt. destroyed and Dodson's dept. store, badly damaged.
Little Rock, Ark.—Paladino's Cafe, Jenny Shop, Chain Clothing Store, damaged.
Santa Monica, Cal.—Chase Hotel damaged.
East St. Louis, Ill.—Nelson Concrete Culvert Co. plt. destroyed.
Canton, Ohio—Melvern factory of Metropolitan Brick, Inc., destroyed. Welder's torch.
Conneaut, Ohio—Conneaut Laundry Co. damaged. Sparks from rubbish.
Anderson, S. C.—Elfird's Dept. store, destroyed.
Bakersfield, Cal.—Gymnasium of rural Sunset School destroyed.
Washington, D. C.—Morton's clothing store whse., damaged.
Chicago, Ill.—Bldg. occupied by M. Bedtke, Mid-Way Printing Co., damaged.
Manasquan, N. J.—Stone Lumber Co. damaged.
Chicago, Ill.—Reliable Motor Sales plt. damaged.
Bluffton, Ind.—The Red Cross Mfg. Corp. damaged.
Houlton, Me.—Town-owned bldgs. at Houlton Air Base, destroyed.
Sea Bright, N. J.—Ship Ahoy Bar and Grill and restaurant damaged.
Pittsburgh, Pa.—Joseph E. Moidel Auto Equipment Co. destroyed.
Quinlan, Tex.—The two-story administration bldg. of Boles Orphans' Home destroyed.
Cape de la Madeleine, Que.—Bldg. occupied by restaurant operated by Frank Sheehan and millinery shop of Mrs. J. Gelinas destroyed.
Vancouver, B. C.—British Columbia Packers, Ltd., dock damaged.
Milford, Dela.—Calvary Methodist Church destroyed.
Seymour, Ind.—Store bldg. occupied by J. C. Super Market; Gold Mine, ready-to-wear store; Lift Bros.; Jackson County Bank & Trust Co. and Hopewell Garage, damaged. Overheated furnace.
Louisville, Ky.—Porter Custom Refinishing Co. at Jeffersonville Boat & Machine Co. destroyed. Lacquer explosion.
Crisfield, Md.—Charles D. Briddell Co., cutlery factory, destroyed. Short circuit.
South Haven, Mich.—Sidney and Leo Goldberg, hardware and auto supply store; South Haven

Moose Lodge; Fisher Style Shop; Niffenegger market; Mielke Tavern; Cohen Bakery, damaged.

Livonia, N. Y.—Eight business establishments, occupied by Livonia Grill, Reed Furniture, Con Wingate Electric Co., a Dime Store owned by Paul Dimarini, Grayce Dress Shop, Jamieston Liquor Store, Shelyer's Beauty Parlor and law offices of John Bishop, destroyed.

Wilmington, N. C.—The Smith Builder's Supply Co. plt. damaged.

Southern Pines, N. C.—Currie Mills, Inc. plt., High Falls, diesel engine power house, destroyed.

Philadelphia, Pa.—Chelten House Restaurant damaged.

Iroquois, Ont.—Powerhouse damaged. Short circuit on electric fan.

Swift Current, Sask.—Elks Lodge and adj. garage, damaged.

Quebec, Que.—Bldg. of Quebec Provincial Govt. Roads and Mines Dept. for storage of chemicals, damaged.

Sidney, N. S.—Lyceum Theatre bldg., main bldg. of Navy League Center and garage of Havlock Bottling Co., damaged.

Syracuse, N. Y.—Camillus High School destroyed. Defective wiring.

Rochester, Pa.—Government-owned plt. of Koppers Co. destroyed. Explosion of butadiene tank.

Buckhannon, W. Va.—Genl. merchandising store and adj. dwelling of Orbed Osburn destroyed.

St. Annes, Man.—Redemptorist Monastery destroyed.

Cambridge, Mass.—Claverly Hall dormitory at Harvard University, damaged.

Newton, Mass.—Duplex dwelling damaged.

Fergus Falls, Minn.—Hinken Carst Electric Co. damaged.

Kenvil, N. J.—Cement mixing hopper at Esquine-Bogert Co., Inc., plt., destroyed.

Kearney, N. J.—Chapel of Knox Presbyterian Church destroyed. Overheated oil burner.

Saltsburg, Pa.—Elders Ridge High School bldg. damaged.

Memphis, Tenn.—The lumber and wood working plt. of Ostby Bros., and Walker & Son, contractors, destroyed.

Greenville, Mich.—Business bldg. occupied by Kroger supermarket, Greenville Finance Co., Greenville Discount Corp., National Cash Register agency, Albert Story law office and several apts. destroyed.

Kalamazoo, Mich.—Sanders House of Youth retail store, Burkick Hotel, destroyed.

Long Prairie, Minn.—Bldg. occupied by Coast-to-Coast hardware store, George Bommersbach, Fairway food store and frozen lockers plt., operated by William Hotlberg; B. A. Berkhoel bowling alley, William Lawin's real estate office, J. X. Klemenhagen's restaurant, damaged.

Lakeview, Ore.—Lakeview Motor Co. and 30 cars destroyed.

Dallas, Tex.—Dee's Hardware store and Cook's Modern Home furniture store, damaged.

Kennewick, Wash.—Bacon Motor Car Co. destroyed.

Franklin, Va.—Hyden High School destroyed.

Merced, Cal.—Lumber yard, cabinet and planing mill and office bldg. of Cross Lumber Co. damaged.

Sedalia, Mo.—Cafeteria, workshop and garage bldg. of Hughsville High School destroyed.

Hammond, N. Y.—Six bldgs. including the Hammond Post Office and A. O. Carr's Grocery and Feed Store destroyed.

Landis, N. C.—Plt. of Landis Milling Co. and Kyle B. Corriher Plumbing Co. shop, destroyed.

Rickersall, Ore.—Burlingham Feed & Seed Co. destroyed.

Tacoma, Wash.—Whse. on Tacoma waterfront, occupied by military supplies and dried peas for Europe under Marshall Plan, damaged.

Brewton, Ala.—Masonic Bldg., occupied by Brewton Standard, weekly newspaper, damaged.

Chicago, Ill.—St. Matthew's Methodist Church damaged. Collision of fuel oil truck and another truck spreading blazing oil on the structure.

Williamston, S. C.—Main bldg., First Baptist Church, damaged. Sparks from electric welding torch.

Oakland, Cal.—Whse., five freight cars, owned by Santa Fe Railroad, destroyed.

Lancaster, Cal.—Radio Shop and two other shops damaged.

Floral, Ill.—Baltimore & Ohio Railroad roundhouse destroyed.

Vineland, N. J.—Garage of National Hauling Contractors Co. destroyed. Adj. Goodman Bag whse. destroyed. Short circuit.

Britton, S. D.—Millers service garage damaged.

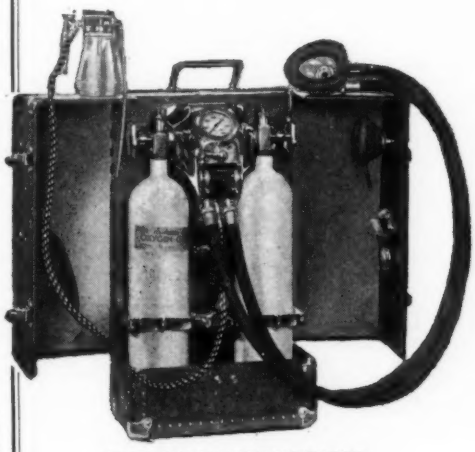
Petersburg, Va.—Petersburg Furniture Co. whse. destroyed; adj. Young-Harrison Clothing Co. and McClelland 5c and 10c store, damaged. Believed incendiary.

Petersburg, Va.—Talmage Furniture Co. and Star Furniture Co. damaged. Believed incendiary.

Green Bay, Wis.—Straubel Paper Co. destroyed. Defective wiring.

Maximum Protection for You!

THE STEPHENSON 4-IN-1 RESUSCITATOR



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(Goodner Model)

Take advantage of this combination Resuscitator, Inhalator, Aspirator and Assistor. Let us show you at your next meeting just how these four features can work for you.

Write today—A Post Card will do—

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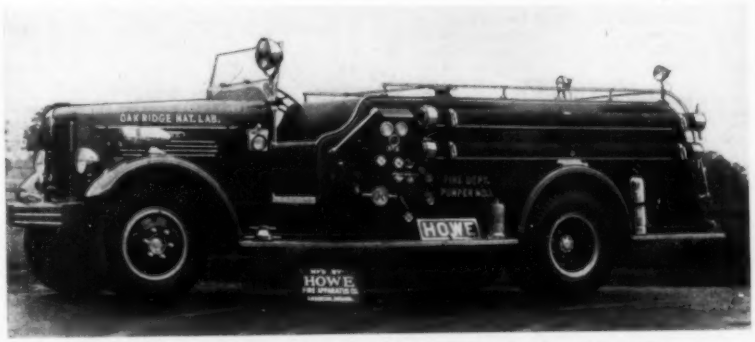

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HOWE FIRE APPARATUS CO., 1402 W. 22nd St., Anderson, Indiana

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MEMORIAL DAY PARADES

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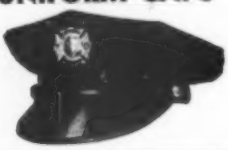

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DOWSE·IT gets water IN to put fire OUT! As you know, many surfaces repel water, and it's hard to get them wet.

DOWSE·IT doubles the penetrating power of water so it thoroughly soaks hard-to-wet materials. Spreads water *eleven* times faster. Smothers gasoline, oil and grease by mixing them with water; cuts down dangerous fumes. Knocks down fire twice as fast. DOWSE·IT added to water, has the effect of doubling your water capacity!

Economical—No Installation
Even one part DOWSE·IT to 400 parts water is 100% effective. Easy-to-Use—just add to water in tank. And SAFE—as water itself!

FREE TRIAL
A test tells more than thousands of words. Order a trial gallon today @ $3.50. Try it at our risk. If not entirely satisfied, return what's left and there will be no charge. Money-Back Guarantee.

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DOWSE-IT is non-corrosive, but water isn't! Protect your tanks from rust and corrosion by using LINE-A-TANK—another product of SUDBURY Research and Development. Lines the inside of booster tanks with an invisible, watertight film which prevents rust and corrosion. Makes your tanks last longer. Pint $2; quart $3.50; gal. $12.50. Money-Back Guarantee.

Dealers: Write for Special Offers!

News of the Manufacturers

(*Continued from page 282*)

taminating areas subjected to poison gas and bacteriological attack.

The Merion Fire Company's new engine is its fourth piece of apparatus. It has two 750 gallon pumpers and an 85-foot aerial ladder.

The last $10,000 needed to pay for the new piece of equipment—the only one of its kind in the general area—was donated by the public in a drive only recently completed. The company plans another fund drive for a new aerial ladder.

The Merion Company, which answers approximately 125 calls a year, provides primary protection in Haverford, Ardmore and Wynnewood and a northern slice of Delaware County, and assists other companies in Bryn Mawr, Narberth, Cynwyd and Pennwynne.

The new piece of apparatus, the first for the Merion Company since before the war, carries 500 gallons of water. It has a Hardie pump mounted amidship which is driven by a Davy power take-off from the main shaft of the Autocar and delivers 800 pounds pressure.

At the nozzle end of the fog guns, 40 gallons a minute are discharged at 700 pounds pressure.

Each of the two fog guns is mounted at the end of a 250-foot reel line of one-inch high-pressure hose. The reels have automatic electric windup.

The engine is equipped with a 30-gallon tank for foam liquid and one of 10 gallons for wetting agent, either or both of which can be opened into the discharge line by the simple turning of a valve on the control board in the forward compartment on the left side. In the same compartment are two 400-pound Pyrene foam playpipes which replace the fog guns on the hose reels when foam is required.

In the right rear of the full-compartment body, is a ladder locker with a 35-foot extension ladder and a 12-foot roof ladder which folds for convenience in carrying up stairs and around corners.

There are four 20-pound carbon dioxide extinguishers. A portable generator in the left rear compartment develops 1500 watts, supplies two 500-watt and two 250-watt flood lights.

There is a deep rear rider platform. A 16-inch manhole in the top platform permits a man to enter the tank to paint it. All wiring is in conduit and waterproof.

Kidde Forms South American Subsidiary

A new South American manufacturing, sales, and service subsidiary has been established in Rio de Janeiro by Walter Kidde & Company, Inc., Belleville, N. J. Known as Walter Kidde S. A. Industria E Comercio, the organization will supply fire protection equipment to the expanding Brazilian economy.

The new plant assembles and manufactures certain types of Kidde extinguishers. As many parts as possible are procured from local suppliers, and others are imported from the company's main plant in Belleville, N. J.

Ralph Kinder, Kidde export manager, said, "the new subsidiary will greatly improve sales and service of Kidde equipment in a vast area which is making remarkable headway in its industrial development. Adequate assembly facilities are located just outside Rio, and our main office is in the city."

President of the newly incorporated firm is William B. Sweet. Eduardo Frias serves as managing director, and Jorge Medeiros is director-superintendent of the plant.

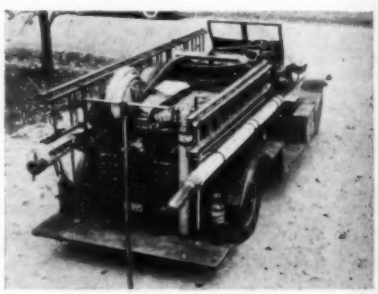
R. L. Beveridge Now Field Engineer

Ray L. Beveridge has been appointed to the position of Field Engineer, Mr. G. L. Smith, Sales Manager, Republic Rubber Division, Lee Rubber & Tire Corp., announced recently.

Mr. Beveridge will headquarter at Republic's Philadelphia District Office where he will contact the industrial organizations of the Philadelphia area in the interest of Republic's line of Industrial Rubber Belting, Hose and Molded and Extruded Products.

New Hose Reel Has Wide Application

The Zierden Company, Milwaukee, Wis., has introduced a new type hose reel that has wide application. It is known as the Water Boy "Rollaway" Hose Reel and is already finding installation on fire apparatus, in fire training schools as well as in industrial and home installation.



The Water Boy Reel Mounted on Fire Truck Is Remotely Operated Through the Metal Lead-In Tube. The Reel Can Be Operated with the Tube or Minus It. With or Without the Tube, Simply Push the Hose Back Into the Container, Which Revolves, Taking in the Hose

The unit, which is remotely operated, contains the hose in loose coils rather than wound tightly around a drum. This detail is said to permit application of high pressures without jamming the hose. The design permits hose to be unreeled in any direction as it has a 360 degree operating range, including up and down.

Four models of "Water Boy" are available: for regular wall mounting; for ceiling or overhead mounting and for through-wall and through-floor mounting. It is said that by changing the container of this new reel, any length of hose of any diameter can be used. The design speeds winding and unwinding; hose is always connected to the water supply, ready for use; it permits storage of hose in out-of-the-way places, yet makes it quickly available for use.

The manufacturer reports the device is in use by municipal fire departments and in government installations, including apparatus at Fort Belvoir, Virginia. It is said, also, that a "Water Boy" reel has been installed at the Milwaukee Fire Department training school,

directed by Deputy Chief Louis W. Hoeft, where it is shown not only to firemen but the 183 representatives of 35 industrial plants in the area not receiving fire and plant protection instructions under a nine weeks course.

Headquarters of the Zierden Company are 3815 S. Kinnickinnic Ave., Milwaukee 7, Wis.

Pneolators for Air Force

Mine Safety Appliances Co., Pittsburgh, Pa., has been awarded a contract to supply 650 new type automatic artificial respiration apparatus for the U. S. Air Force, it was announced on March 21.

The contract was received from the Armed Services Medical Services Procurement Agency. Used to revive victims of any kind of asphyxiation, the portable apparatus, known as a Pneolator, will be installed in Air Force base hospitals, on crash ambulances and similar emergency equipment.

New Radio Communications Guide

The Leece-Neville Company, of Cleveland, Ohio, has published "A Guide to Mobile Communications for Civil Defense." This booklet gives information on how two-way mobile radio serves to help coordinate all operating services into an efficient team. The guide can be obtained free by civil defense and government officials or others concerned by addressing the Leece-Neville Company.

During an emergency, it is imperative that constant communication be maintained between local civil defense control centers and mobile services. With this self-contained and self-powered system, the Civil Defense Director has complete control of all services: the chief warden, police, rescue, fire department, medical and taxi.

In order that all civil defense units operate at top efficiency, it is vitally necessary that the electrical power supply in each vehicle be adequate. The conventional direct current generator does not provide sufficient power for the radio transmitter and receiver as well as for the battery, current for lights, siren and other accessories. Installation of a d.c. generator of higher capacity is not the answer either, since no d.c. generator starts charging until the motor is speeded up.

As a result, operation of the two-way radio when the vehicle is at rest requires that the motor be kept running rapidly to prevent the battery from running down. The result is heavy consumption of gasoline and excessive motor wear.

As a result, operation of the two-way radio when the vehicle is at rest requires that the motor be kept running rapidly to prevent the battery from running down. The result is heavy consumption of gasoline and excessive motor wear.

The Leece-Neville A.C.-D.C. Alternator System eliminates these problems entirely because it makes possible high current output at low engine speed. In fact, the Alternator System produces 25 to 35 amperes with the engine idling.

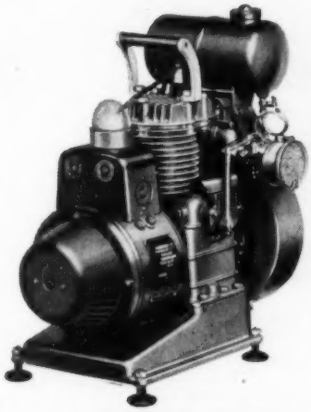
The Alternator System consists of three units: the alternator, which produces alternating current; the rectifier, which changes the alternating current to direct current; the regulator, which accurately controls the voltage.

In order that accessories like flood

KOHLER ELECTRIC PLANTS

Independent Source of Electricity

PORTABLE AND MOBILE



MODEL 1.5M5, *1500 watts, 115 volt DC. Manual control. Length 18", width 14", height 21".*

Low-cost model for floodlights, tools having universal (AC-DC) motors. Develops 1500 watts for intermittent service. Increases fire-fighting efficiency. Fits into small space, weighs only 75 lbs. Handle for carrying. Powered by 4-cycle air-cooled engine. Other sizes, 350 watts to 15 KW. Write for folder 22-A.

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The NEW Three Stage DARLEY Champion Pump

500 or 600 or 750 Gallon Underwriter Performance PLUS

60 Gallons per Minute at 850 Lbs. For High Pressure Fog

NEW 44 PAGE BOOKLET of FIRE APPARATUS & FIRE PUMPS

Write Today For Your Copy

W. S. DARLEY & CO., CHICAGO 12

Picture of truck facing front with canopy out.

•

Picture of truck facing rear with canopy in.

BRUCO

BRUMBAUGH BODY COMPANY ALTOONA PENNA.

Bruco semi-enclosed squad and emergency truck with all steel sliding canopy to give you all weather protection. Canopy can be mechanically operated as well as manually. All compartments and appointments to your specifications. Portable equipment mounted on handy slide-out racks. Furnished with or without pump and tank. Write today for information on Squad Trucks, Emergency Trucks, or pumpers.

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FOR COMFORT & PROTECTION

WE ARE DISTRIBUTORS FOR

SIREN BOOTS

We have been supplying FIREMEN'S CLOTHING for over 25 years.

Any fireman can have a catalog by writing —

BODY-GUARD MANUFACTURING CO.

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CAN PAY for ITSELF IN 6 MONTHS

by Eliminating Dry Batteries

5" TRUE parabolic, silver plated reflector; 25,000 c.p. beam; 1/3 mile range; sturdy metal case; corrosion proof terminals.

Only 72 ounces. Will not spill in ANY position.

Battery change in 10 seconds without returning to factory.

NON-SPILLABLE—RECHARGEABLE

Type G-23

MASTER-LIGHT for FIREMEN

Police and Watchmen

Write for new Emergency Lighting Bulletin

CARPENTER-LIGHTS

200 Master-Light Bldg.

BOSTON-45-SOMERVILLE MASSACHUSETTS

lights, heating pads, instrument sterilizers, etc., may be plugged in, a transformer can be installed in an Alternator-equipped vehicle to deliver up to 250 watts of 110 volts A.C.

New Portable Signal For Emergency Traffic Jams

A portable traffic signal, having its own generated power supply, reportedly the first of its kind, has been placed in operation by the City of Newark, Ohio.

The unique idea of City Electrical Inspector Elmer E. Leedy, the signal is mounted on rubber-tired dolly wheels enabling it to be readily towed to any part of the city demanding emergency traffic control, in connection with traffic congestion resulting from accidents, fires, parades, etc.

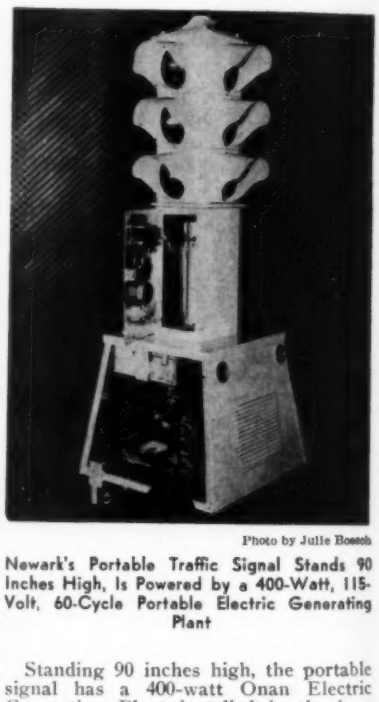


Photo by Julie Boesch

Newark's Portable Traffic Signal Stands 90 Inches High, Is Powered by a 400-Watt, 115-Volt, 60-Cycle Portable Electric Generating Plant

Standing 90 inches high, the portable signal has a 400-watt Onan Electric Generating Plant installed in the base which produces the 110-volt current necessary to operate the control and signal. Designed to operate as a conventional signal light during normal operation, the signal can, whenever Fire or Police Departments find it necessary to close off an intersection, be switched over to such a position that the light will burn red continuously on all four sides. By installing a large gasoline tank inside the unit, Newark City electricians estimate the signal could operate for a period of 20 hours without attention.

The idea for the portable traffic signal was suggested by Newark's Mayor Edwin J. Haynes to eliminate accident hazards where regular traffic signals could not be put into immediate operation. The Mayor gave as an example a recent traffic accident where two power poles were broken as the result of a collision, and the regular traffic light was put out of commission for six hours, during which time two other accidents resulted at the intersection because of no traffic light.

Helpful Manual on Hose Care

A new, comprehensive publication on the care and drying of fire hose has been released by the Circul-Air Corporation, 575 E. Milwaukee Ave., Detroit 2, Mich., which should find a place in every fire chief's library. It is entitled "Hose Drying Manual."

The 12-page manual gives facts on the care of fire hose and the advantages of drying hose by air conditioning as compared with the old style hose tower method and includes statements from leading fire chiefs on the use of hose driers.

New Waterous Discharge Gate Valve

A new quick-opening ball-type discharge gate valve for fire apparatus is now offered by the Waterous Company of 80 Fillmore Ave. E., St. Paul, Minnesota. The new design is the result of several years of research and testing.

The valve is easy-operating, even at pressures of 500 pounds per square inch, due to the unique type of valve seat employed. The seat is synthetic, oil-resistant rubber, and the pressure of the water is utilized to keep the seat tight against the valve ball but with the pressure controlled so that excessive friction is avoided. The rubber-like seat lessens the danger of sand or grit destroying the seal.

With the valve open, water flows through a round passageway with negligible friction loss. However, if desired, flow of water can be throttled by partially closing the valve. The valve can be locked in any position from full open to full closed by pushing down on the operating handle. The locking device is rugged, and effectively stops creeping of the valve.

Drain ports are provided to permit draining of the hose lines when the valve is closed; the valve itself also can be drained in freezing weather. If the drain cock is opened, following use of the equipment, the valve will not stick due to freezing of water film or droplets which remain after draining.

The valve is constructed of corrosion resisting metals, including bronze body and valve ball with stainless steel stems, and is furnished with 2½" National Standard hose thread, or special threading to order. The valves are offered as standard equipment on new apparatus or as replacement items by all fire apparatus manufacturers who feature Waterous fire pumps.

Quaker Rubber Promotes Lewis

J. R. Lewis has been appointed Assistant General Sales Manager of Quaker Rubber Corporation, Philadelphia, a division of H. K. Porter Company, Inc., it was announced recently by J. R. Keach, Vice President and General Manager.

Mr. Lewis has been with Quaker since 1940. He has advanced steadily in the organization, having held positions as Philadelphia District Sales Manager and Assistant Sales Manager.

In his new position, Mr. Lewis will assist the General Sales Manager, in providing better service to Quaker's distributors and customers.

TRUMPET QUADWAY NOZZLES INVITE ON-THE-JOB COMPARISON

● Again this year, departments from coast to coast are adopting the Quadway as standard nozzle equipment.

And there's a good solid reason for this continuing trend.

Their change-over policies are based on actual service comparisons. They have found something more than just a dependable, smooth operating, conventional nozzle. The Trumpet Quadway is the one nozzle that gives them every kind of stream they need—on a moment's notice. A solid straight stream, a dense, smothering fog mist that is adjustable, or a combination of both to any varying degree.

We invite you to make the same on-the-job comparisons. Match it with any of your present nozzles, under any and all conditions. We think you too will standardize on versatile Quadways.

Write direct or contact your local Wooster Brass Representative

HOSE BRASS GOODS W&B LINE THE WOOSTER BRASS CO. WOOSTER, OHIO

THE WOOSTER BRASS CO.
WOOSTER OHIO

MANUFACTURERS OF A COMPLETE LINE OF DISTINCTIVE FIRE FIGHTING EQUIPMENT

The "NEW YORKER"
(No. 5A—Regulation)
IN LEATHER

CAIRNS HELMETS

The "CLIFTON"
(No. 900—Regulation)
IN PLASTIC

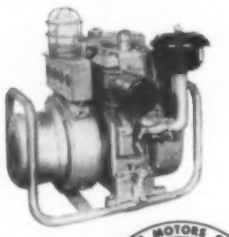
Write for Catalog 331

CAIRNS & BRO., Inc. ALLWOOD, CLIFTON, N. J.

Here is DEPENDABLE

POWER

for floodlights
for radio
for pumps
for blowers



"U. S." Electric Plants are famous for economy, rugged construction, and *dependability*. A complete line of units for fire department needs. Write for information.

UNITED STATES MOTORS CORP.
430 Nebraska St. Oshkosh, Wis.

Convention Dates

Apr. 30-May 2—FLORIDA STATE FIREMEN'S ASSOCIATION. Annual meeting, Fort Lauderdale, Fla. Secretary E. J. Langley, Box 344, Florida State Hospital, Chattahoochee, Fla.

Apr. 30-May 3—NORTHWEST FIRE SCHOOL. Annual meeting, Saint Paul, Minn. Director, Leonard C. Lund, Deputy Commissioner, Insurance Division, Department of Commerce, State Office Building, Saint Paul 1, Minn.

May 6—NEBRASKA FIRE SCHOOL. Regional meeting, Wahoo, Neb. For information contact J. I. Fetters, Assistant State Supervisor, Trade and Industrial Education in charge of Firemen's Training, Lincoln 9, Neb.

May 7-11—FLORIDA STATE FIRE COLLEGE. Units Nos. 1, 2, 3 of Basic Course, Ocala, Fla. For information contact W. H. Barnett, Box 372, Neptune Beach, Fla.

May 7-11—NATIONAL FIRE PROTECTION ASSOCIATION. Annual meeting, Detroit, Mich. General Manager, Percy Bugbee, National Fire Protection Association, 60 Batterymarch Street, Boston 10, Mass.

May 10-12—SOUTHWESTERN ASSOCIATION OF FIRE CHIEFS. Annual meeting, Galveston, Texas. Secretary-Treasurer, Dr. B. J. Barrodale, Houma, La.

May 13—NEBRASKA FIRE SCHOOL. Regional meeting, Neligh, Neb. For information contact J. I. Fetters, Assistant State Supervisor, Trade and Industrial Education in charge of Firemen's Training, Lincoln 9, Neb.

May 14-17—NEW MEXICO FIRE SCHOOL. Annual meeting, Hobbs, N. M. For information contact Hobbs Fire Department.

May 14-18—FLORIDA STATE FIRE COLLEGE. Units 1, 2 and 3 of Basic Course, Ocala, Fla. For information contact W. H. Barnett, Box 372, Neptune City, Fla.

May 15-18—IOWA FIRE SCHOOL. Annual meeting, Iowa State College. For information contact R. C. Byrus, Engineering Extension Service, Iowa State College, Ames, Ia.

May 16—FIRE CHIEFS EMERGENCY PLAN OF WESTCHESTER COUNTY. Monthly meeting. For information contact Chief John S. A. McAuliffe, Croton-on-Hudson, N. Y.

May 20—NEBRASKA FIRE SCHOOL. Regional meeting Lexington, Neb. For information contact J. I. Fetters, Assistant State Supervisor, Trade and Industrial Education in charge of Firemen's Training, Lincoln 9, Neb.

May 21-25—FLORIDA STATE FIRE COLLEGE. Units 1, 2 and 3 of basic course, Ocala, Fla. For information contact W. H. Barnett, Box 372, Neptune City, Fla.

May 23—FIRE CHIEFS EMERGENCY PLAN OF FAIRFIELD COUNTY. Annual meeting. For information contact George B. French, Trumbull, Conn. Secretary.

May 24-26—EASTERN ASSOCIATION OF FIRE CHIEFS. Annual meeting, Johnstown, Pa. Secretary, Charles E. Clark, Box 271, Wayne, Pa.

May 27—NEBRASKA FIRE SCHOOL. Regional meeting, Alliance, Neb. For information contact J. I. Fetters, Assistant State Supervisor, Trade and Industrial Education in charge of Firemen's Training, Lincoln 9, Neb.

May 28-June 1—FLORIDA STATE FIRE COLLEGE. Units 4, 5 and 6 of the Basic Course, Ocala, Fla. For information contact W. H. Barnett, Box 372, Neptune Beach, Fla.

June 3—NEBRASKA FIRE SCHOOL. Regional meeting, Imperial, Neb. For information contact J. I. Fetters, Assistant State Supervisor, Trade and Industrial Education in charge of Firemen's Training, Lincoln 9, Neb.

June 3-6—NEW YORK STATE ASSOCIATION OF FIRE CHIEFS. Annual meeting, Poughkeepsie, N. Y. Secretary-Treasurer, Chief Henry F. Drake, Clinton Corners, N. Y.

June 4-8—FLORIDA STATE FIRE COLLEGE. Units 4, 5 and 6 of the Basic Course, Ocala, Fla. For information contact W. H. Barnett, Box 372, Neptune Beach, Fla.

June 4-9—CONNECTICUT FIRE COLLEGE. Annual meeting, New Haven Fire School. Supervisor Service Training, L. M. Eddy, 490 Capitol Avenue, Hartford, Conn.

June 5-7—KENTUCKY FIRE SCHOOL. Annual meeting, Lexington, Ky. Chairman, J. L. Thompson, Kentucky Inspection Bureau, Louisville 2, Ky.

June 7-8—NORTH DAKOTA FIREMEN'S ASSOCIATION. Annual meeting, Bismarck, N. D. Secretary, H. R. Handtmann, Bismarck, N. D.

June 8-9—INDIANA INDUSTRIAL AND VOLUNTEER FIREMEN'S ASSOCIATION. Annual meeting. Bremen, Ind. Secretary-Treasurer, Robert D. Widmar, Bremen, Ind.

June 11-13—TENNESSEE FIREMEN'S ASSOCIATION. Annual meeting, Memphis, Tenn. Secretary, L. E. Potts, c/o Fire Department, Nashville, Tenn.

June 11-15—FLORIDA STATE FIRE COLLEGE. Units 4, 5 and 6 of the Basic Course, Ocala, Fla. For information contact W. H. Barnett, Box 372, Neptune Beach, Fla.

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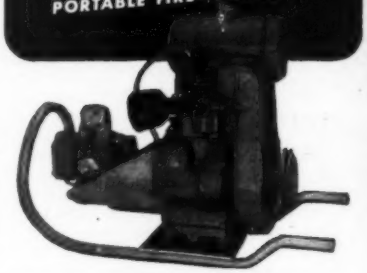

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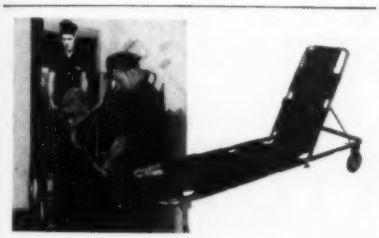

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Convention Dates

June 18-20—SOUTHEASTERN ASSOCIATION OF FIRE CHIEFS. Annual meeting, Norfolk, Va. Secretary-Treasurer, Chief E. F. Beville, Gainesville, Fla.

June 18-22—SOUTH DAKOTA FIRE SCHOOL. Annual meeting, Pierre, S. D. Associate Secretary, Chief R. W. Hanigan, Pierre, S. Dak.

June 18-23—FLORIDA STATE FIRE COLLEGE. Units 1 and 2 of the Advanced Course and Fire Service Practices, Ocala, Fla. For information contact W. H. Barnett, Box 372, Neptune Beach, Fla.

June 19-22—ILLINOIS FIRE COLLEGE. Annual meeting. University of Illinois. Champaign-Urbana, Ill. Secretary Illinois Firemen's Association, Chief Roy W. Alsip, Champaign, Ill.

June 19-22—NEW ENGLAND ASSOCIATION OF FIRE CHIEFS. Annual meeting. The Wentworth by-the-Sea, Portsmouth, N. H. Secretary-Treasurer, John W. O'Hearn, 22 Mt. Auburn Street, Watertown 72, Mass.

June 19-22—NEW ENGLAND DIVISION, INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. Joint meeting with New England Association of Fire Chiefs, The Wentworth by-the-Sea, Portsmouth, N. H. Secretary, Chief A. H. Koltonski, Rutland, Vt.

June 20—FIRE CHIEFS EMERGENCY PLAN OF WESTCHESTER COUNTY. Monthly meeting. For information contact Chief John S. A. McAuliffe, Croton-on-Hudson. President.

June 20-22—MARYLAND STATE FIREMEN'S ASSOCIATION. Annual meeting, Cumberland, Md. Secretary B. R. Benson, 303 Bosley Avenue, Towson 4, Md.

June 20-24—BERKS COUNTY FIREMEN'S ASSOCIATION. Annual Fire Training School, Wyomissing, Pa. Secretary, Adam Ed. Baer, Jr., 213 S. 3rd Avenue, West Reading, Pa.

June 25-27—MISSOURI VALLEY ASSOCIATION OF FIRE CHIEFS. Annual meeting, St. Louis, Mo. Secretary-Treasurer, Chief Ray B. Tiller, 319 East 5th Street, Waterloo, Ia.

June 25-29—FLORIDA STATE FIRE COLLEGE. Units 1 and 2 of the Advanced Course and Fire Service Practices, Ocala, Fla. For information contact W. H. Barnett, Box 372, Neptune Beach, Fla.

June 26-28—SASKATCHEWAN ASSOCIATION OF FIRE CHIEFS. Annual meeting, Prince Albert, Sask. Secretary, Chief William Winton, Estavan, Sask.

June 27—FIRE CHIEFS EMERGENCY PLAN OF FAIRFIELD COUNTY. Monthly meeting. For information contact George B. French, Trumbull, Conn., Secretary.

July 9-13—FLORIDA STATE FIRE COLLEGE. Units Nos. 1 and 2 of the Advanced Course, Ocala, Fla. For information contact W. H. Barnett, Box 372, Neptune Beach, Fla.

July 18—FIRE CHIEFS EMERGENCY PLAN OF WESTCHESTER COUNTY. Monthly meeting. For information contact Chief John S. A. McAuliffe, Croton-on-Hudson, N. Y., President.

July 23-27—WEST VIRGINIA STATE FIRE SCHOOL. Annual meeting, Morgantown, W. Va. Director, R. E. Hanna, Jr., Fire Service Extension Schools, School of Mines, West Virginia University, Morgantown, W. Va.

July 24-25—WESTERN NEW YORK VOLUNTEER FIREMEN'S ASSOCIATION. Annual meeting, Mount Morris, N. Y. Secretary, James H. Surridge, Industry, N. Y.

Aug. 6-10—PENNSYLVANIA FIRE SCHOOL. Annual meeting, Lewistown, Pa. For further information write Fire School, Public Service Institute, Department of Public Instruction, Harrisburg, Pa.

Aug. 7-10—PACIFIC COAST INTERMOUNTAIN ASSOCIATION OF FIRE CHIEFS. Annual meeting, Portland, Ore. Secretary-Treasurer Jay W. Stevens, Merchants Exchange Building, San Francisco, Cal.

Aug. 14-17—INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. Annual meeting. Grand Rapids, Mich. Secretary-Treasurer, Chief Daniel B. Tierney, 8 Robbins Road, Arlington 74, Mass.

Aug. 16-18—CONNECTICUT FIREMEN ASSOCIATION. Annual meeting, Stamford, Conn. Secretary-Treasurer, John J. Moehring, 51 Rutz Street, Stamford, Conn.

Aug. 20-23—DOMINION ASSOCIATION OF FIRE CHIEFS. Annual meeting, London, Ont. Secretary-Treasurer, Chief Allan H. Clark, Fire Headquarters, Lakefield, Ont.

August 21-24—FIREMEN'S ASSOCIATION OF THE STATE OF NEW YORK. Annual meeting, New York, N. Y. Secretary, Eugene M. Braun, 4025 Main Street, Buffalo, N. Y.

Sept. 17-20—INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION. Annual meeting, Mark Hopkins Hotel, San Francisco, Cal. Secretary, Irvin Shulsinger, 11 West 42nd Street, New York 18, N. Y.

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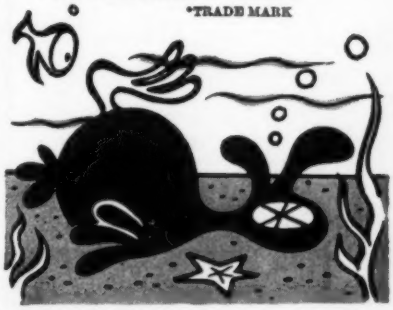

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Oswego County Organized

Oswego County, New York, is another one of the state's counties organized under the legislative acts approved recently in that state setting up fire coordinators and fire advisory boards to direct mutual aid and training programs.

Oswego County has 22 fire departments, all tied in with mutual aid agreements. The cities of Oswego and Fulton both have paid departments, the remaining departments being volunteers. At present there are about 900 trained firemen in the county. The mutual aid system was set up by the Fire Advisory Board last October and has been operating ever since.

The officers of the Fire Advisory Board of the county, recently reappointed without change, are: J. R. Jackson of Oswego, chairman; Chief Floyd Tyler of Hannibal, secretary; Chief Claude Gates of Mexico, vice chairman, and Howard Strywing of Central Square, coordinator. Dispatchers for mutual aid are Mr. and Mrs. J. R. Jackson.

Chiefs on the Fire Advisory Board include: Floyd Tyler, Hannibal; Claude Gates, Mexico; Rowlen Beley, Parish; Robert Glohn, Cleveland; Ex-Chief Howard Strywing, Central Square; Roy Austin, Cody District Fire Department; Harold Parkhurst, Pulaski, and J. R. Jackson, the non-fireman member. Three supervisors of the county are on the auditing committee; they are: Claude Chillser, Hannibal; O. MacMatthys, Central Square and Howard Johnson of the Town of Granby.

Chicago Atomic Test

(*Continued from page* 268)

succeeded in reporting for duty and that he had sent about 400 of the more exhausted on-duty firemen to fire stations for cleanup and a three-hour rest period. He instructed the Second Deputy to take similar action. The First Deputy also informed the Defense Director that additional personnel was urgently needed as further advance was now being made into the damaged area. He reported water supply improved and many fringe fires under control.

6:00 p.m.—It was reported that considerable military personnel were available for fire control work. These men were assigned to fire companies and an equal number of the now exhausted firemen were sent to fire stations for a three-hour rest.

The First and Second Deputies reported that fringe fires were mostly under control but that the main body of the bomb area fires had not yet been reached. They reported, however, that because of the sustained efforts of the Water Department Repair Crews, their water supplies were much improved and consequently the danger of further fire spread was abated.

They further reported that food supplies furnished to their personnel by the civil population were depleted and they asked for further food supplies. The deputies also asked for additional gasoline which they would soon need as well as portable lighting units to supplement those on hand for operations in the approaching night.

7:10 p.m.—The Defense Director at Primary Control called for a manpower and distribution report which was supplied by the Fire Alarm Office.

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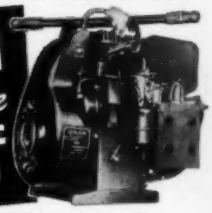

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Throughout the day the Fire Department Chaplain had marshaled and directed the efforts of the mutual aid fire service chaplains and numerous volunteers toward sustaining the fire forces and comforting and caring for the rescued and injured in cooperation with the Welfare section of the Medical Division.

7:20 p.m.—There was a sound of another tremendous explosion and the Downtown Fire Alarm Office immediately lost all light and power. The Chief Fire Alarm Operator ordered a switch to battery power. Upon test he found communications disrupted in a southwesterly direction but intact as before north of Madison Street and east of the Chicago River to 39th Street. Contact was made with the Englewood Alarm Office which reported communications intact south of 39th Street (excepting in the south bomb area). The Loop streets were now almost deserted and the confusion following the morning explosions was not repeated.

Englewood office reported that the First Deputy had responded to the new blast, leaving orders that all companies which might possibly be spared from the south blast area be made ready for orders from the Englewood office. He reported that the main body of the south area fire had subsided but that considerable fire and an immense amount of overhauling still remained.

He further reported that all possible rescue had been made and his crews were now working with the rescue sections of the Public Works and Engineering Divisions in recovering bodies by cooling ruins to permit entry.

The Second Deputy reported similar conditions in the north bomb area excepting that the main body of that fire continued severe and threatening further spread to the south and east. He indicated that he would defer overhauling and release as many companies as possible to the west (third) bomb blast area.

The Downtown Fire Alarm Office immediately dispatched all standby companies (within communications reach) to the west (third) bomb area command post. Englewood Office was expected to do likewise with all available companies south of 39th Street. It was assumed that companies without communications to the west had responded as provided in Special Order XXX.

At this time the Automotive Service Engineer had reported that, during the day, by cannibalization from old equipment, he had succeeded in rendering the following additional equipment serviceable: 13 engines, five hook and ladders, four tractors, three high pressure wagons.

He was instructed to send this additional equipment, manned as well as possible, to the command posts close to the west bomb area for use as needed.

It later developed that in addition to the equipment just mentioned the response to the third bomb blast on first assignment was as follows: 14 engines, 10 hook and ladders, seven battalion chiefs.

7:30 p.m.—The Drillmaster sent his aide to meet the First Deputy on the west side of the third blast area and inform him that communications were intact at Engine 24 and to transmit his orders from that location.

7:45 p.m.—Officers at west (third) blast area were reporting. They indicated that fire conditions were not as severe as at the morning blast areas but that

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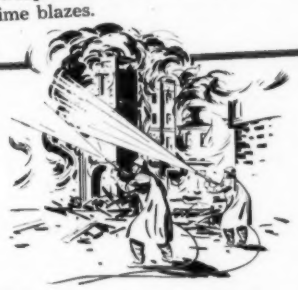

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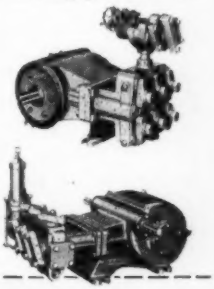

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destruction and dust conditions made it advisable to delay entry until monitoring teams of the Medical Division could make a contamination survey.

They were meanwhile engaged in rescue work on the area fringe and they asked for medical personnel and additional fire companies. They noted that the area had been evacuated subsequent to the morning blasts excepting in the hospital neighborhood to the north where some disorder prevailed. Traffic conditions in the area were good as only emergency vehicles were on the streets.

8:15 p.m.—The Drillmaster's aide reported he had contacted the First Deputy who stressed the need for pumpers, trucks, lighting and heavy duty equipment as well as rescue teams at all command posts, also the need for communications between command posts.

The Communications Division established field connections between the command posts. Rescue teams were put to work by the Public Works and Engineering Divisions and the Department Chaplain brought in workers in his field similar to those provided at the morning blast area.

8:20 p.m.—Companies from both the south and north bomb areas began to return to quarters. They were dispatched to the third blast area as soon as possible to equalize the forces at the various posts.

At this time, to avoid confusion resulting from the rapid movement of companies now heavily integrated with military personnel, the Defense Director at Primary Control sent an "attention department" to all fire stations instructing rest period men to remain in quarters until further notice.

Police radio was contacted concerning the establishment of communications on the west side of the third blast. It reported its channels jammed with police messages but endeavored to carry out the assignment. However, Communications Division was now able to remedy the situation.

With the loss of the Harrison Street Pumping Station, water mains were completely disrupted in the area. The Chicago River offered the best available supply to the south and east and the two fireboats in the North Branch of the River were sent to 16th Street (South Branch) to head off the fires travelling northeast.

8:45 p.m.—The area of the blast destruction was generally determined. While some fires were gaining in intensity the threat of their extension across the river had abated.

9:00 p.m.—The First Deputy had contact with all third blast area command posts and began to distribute his forces to the best advantage. Radiological monitoring teams were functioning and companies were able to advance in some segments while companies in other segments were ordered to decontamination centers for examination. The apparatus thus stripped of personnel was manned as well as possible from available personnel, military, retired firemen, and mutual aid pools.

9:30 p.m.—The First Deputy stressed the need for more pumpers, ladders, and heavy duty equipment at all third bomb command posts. The Downtown Fire Alarm Office board showed 35 pumpers released from the south blast area. They were sent to the third area together with 30 pumpers from the north blast area. These movements were progressive, to avoid confusion of a large number of pieces of apparatus arriving at one time.

9:45 p.m.—The Automotive Engineer estimated the equipment loss in area 3 at between 20 and 30 pumpers and the personnel loss to be 90 killed or missing and 120 injured. He thought that half of this equipment could be restored to service by cannibalization of parts, but exhausted repair shop personnel and darkness would delay this restoration.

The Defense Director was notified and he ordered a rest period for all but a skeleton shop force to keep operating equipment functioning with the aid of mechanical crews borrowed from the Transportation Division.

(By the following morning it was definitely established that 15 pumpers were entirely lost and 14 had been restored to service by these mechanics during the night.)

10:00 p.m.—The Drillmaster reported the number of men on rest periods and their locations. The Transportation Division was instructed to pick these men up and make them available at the third blast area without regard to company assignment.

11:15 p.m.—These men began relief of exhausted crews at the third blast area.

11:30 p.m.—The Defense Director ordered a six-hour rest period for all chief officers at bomb areas. They were relieved by Division Marshals from dispersal stations.

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Classified Advertisements

Closing date for copy 25th of month preceding date of issue.

WILL-O-LINE

Horse Drawn Fire Apparatus

A complete Department to choose from including Horses. Each kit makes a beautiful authentic ¼" scale piece. Write for circular.

BAY MODELS
Box 1014
Braintree 84, Mass.

FOR SALE

One 1932 ladder truck, with or without ladders and poles, Continental motor, wheel base 21'6", total length 40'2", run 3,300 miles, one spare tire 34 x 7, hose body will take 1,000 feet of 2½-inch hose. The Township of Hillside will receive bids up to and including May 15, 1951, for the above machine which may be inspected at any time at Fire Headquarters, 395 Hollywood Avenue, Hillside, New Jersey. The Township Committee reserves the right to accept or reject any or all bids deemed for the best interests of the Township of Hillside.

HOWARD J. BLOY, TOWNSHIP CLERK
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10 Ft. Hard Rubber Suction 4½ N.S.T. Brass	$35.00
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Trussed Extension Ladders	$200.00
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4½ x 2½ Double Female N.S.T.	$5.00
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1921—Seagrave 750 Gal. Pumper Fire Truck	$500.00
1929—Chev. Front Mount Pump. 300-Gallon Water Tank	$500.00

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Edgar, Wisconsin

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1½" DJ CRL fire hose, unused, but soiled—$.75 per ft., cpld.
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1½" DJ CRL fire hose—$.89 per ft.
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ALL HOSE IN 50' LGTHS.
Delivery—from stock

TOWSON HOSE & RUBBER CO.
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FOR SALE

1—Mack Aerial Truck. 1925 Model AC. Chassis No. 729079 Type AC-7, 4 cylinder bulldog type tractor, solid tires, 75 ft. wood spring-hoist aerial, in good condition.

Ground ladders: 50 ft. extension, 16 ft. extension, 16 ft. straight, 20 ft. truss, 24 ft. truss, 25 ft. truss, 2—30 ft. truss ladders.

Picks, axes, sledge hammers, etc.

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City Engineer & Purchasing Agent
Athens, Georgia

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FOR SALE

350 unused 18 lb. CO₂ Cylinders
Make Offer
1029 RIALTO BLDG.
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Fire Protection Field—In Municipality or Plant. 26 Years of Experience in Fire Engineering, Fire-Prevention, Protection and Fire Fighting, Maintenance Supervision and Personnel Training. Age 49. Married and Unlimited References. Write to Box 200, c/o FIRE ENGINEERING, 24 West 40th Street, New York 18, N. Y.

FOR SALE

One used four-speed overdrive transmission from Seagrave eight-cylinder engine. Perfect condition.

LONG RIDGE FIRE CO., INC.
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Stamford, Connecticut

It will help if you mention FIRE ENGINEERING *when writing advertisers*

The Fireman's Choice

Powerful Light

When he needs it—where he needs it

Big Beam

PORTABLE ELECTRIC HAND LAMPS

Model 700
2000-foot beam

Most powerful, heavy-duty hand lamp of its size. Adjustable 6-inch head. Operates on four standard No. 6 dry cells.

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Popular price, light weight, easy to carry. Adjustable 5-inch head. Operated on two standard lantern batteries.

Write for folder on complete information on these and other Big Beam dry-cell and storage-battery models.

U-C LITE MANUFACTURING CO.
1041 West Hubbard Street
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Janesville

JANESVILLE QUALITY TURN OUT CLOTHING

Our turnout suits are giving excellent satisfaction in most of the large fire departments throughout the U. S. and

THERE MUST BE A REASON WHY SO MANY FIREMEN INSIST ON JANESVILLE QUALITY

Janesville APPAREL CO.
JANESVILLE, WISCONSIN

12:00 Midnight—The Drillmaster summarized conditions at blast area three, reporting that the main body of this fire had burned out with small danger of further spread. He said regular personnel, having had little or no relief, were close to exhaustion. The Drillmaster said water supplies were so poor that many engines were relaying from static supplies with great difficulty.

Similar conditions were reported from the north blast area and with the withdrawal of fireboats 37 and 41, fires were regaining headway in that area. Standby companies and trailer pump companies were controlling normal fires throughout the city.

At Blast 3, the fires were isolated and possibilities of conflagration abated. The fireboats were meeting water needs in the critical area. Water supplies on the north continued to improve with the sustained efforts of the Water Department crews. The Department of Electricity gradually was restoring electric service and bringing portable lighting equipment into service. Rescue work continued although rescue crews were being exhausted.

The Defense Director ordered concentration of effort on rescue of the living and control of important fires. He directed that personnel seek needed rest at the scene and that blankets and foot be provided immediately by the Welfare Section of the Medical Division. Exhausted crews lay down where they were and returned to their efforts after a brief rest.

Fire Control operations continued at all bombed areas for the following four days. By the end of that period the main fires had burned themselves out and fringe fires were completely controlled. By that time rubble clearance was underway by the Divisions of Public Works and Engineering concurrently with overhauling by details of fire officers and men. By the time it was completed, reconstruction was started and the incidental operations were considered completed by the Chicago Fire Department.

Throughout this time other water supplies were found in wells, indoor pools and outdoor pools, park lagoons, water from slips, reservoirs, gravity tanks, and other gravel pits.

During the early stages after each bomb burst the helicopters of the Transportation Division were used to survey the extent of the damaged areas. They submitted their reports to primary control which relayed the information to the fire officers concerned.

When penetration of each area became possible the Fire Service used the two-way portable radios made available by the Communications Division. Both of the foregoing facilities were highly valuable in the fire service operations.

In the early hours subsequent to the morning incidents, the amateur radio operators working under the Communications Division, gave valuable assistance in maintaining contacts until other communications were established. They performed similar useful services following the evening incident.

The Chicago Fire Department at present has some pieces of equipment equipped with two-way radio. But it operates through the police radio system. Chief McAuliffe's committee based their problem and solution on the Chicago Fire Department as its manpower and equipment stood on September 18.

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Actual Size No. 5822

AND BUTTON

Actual Size No. 7414

OF YOUR ASSOCIATION

Wear One!

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Rolled Gold $8.50—14 Kt. Gold $55.00

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Rolled Gold $1.00—14 Kt. Gold $3.50
Plus 20% Federal Tax

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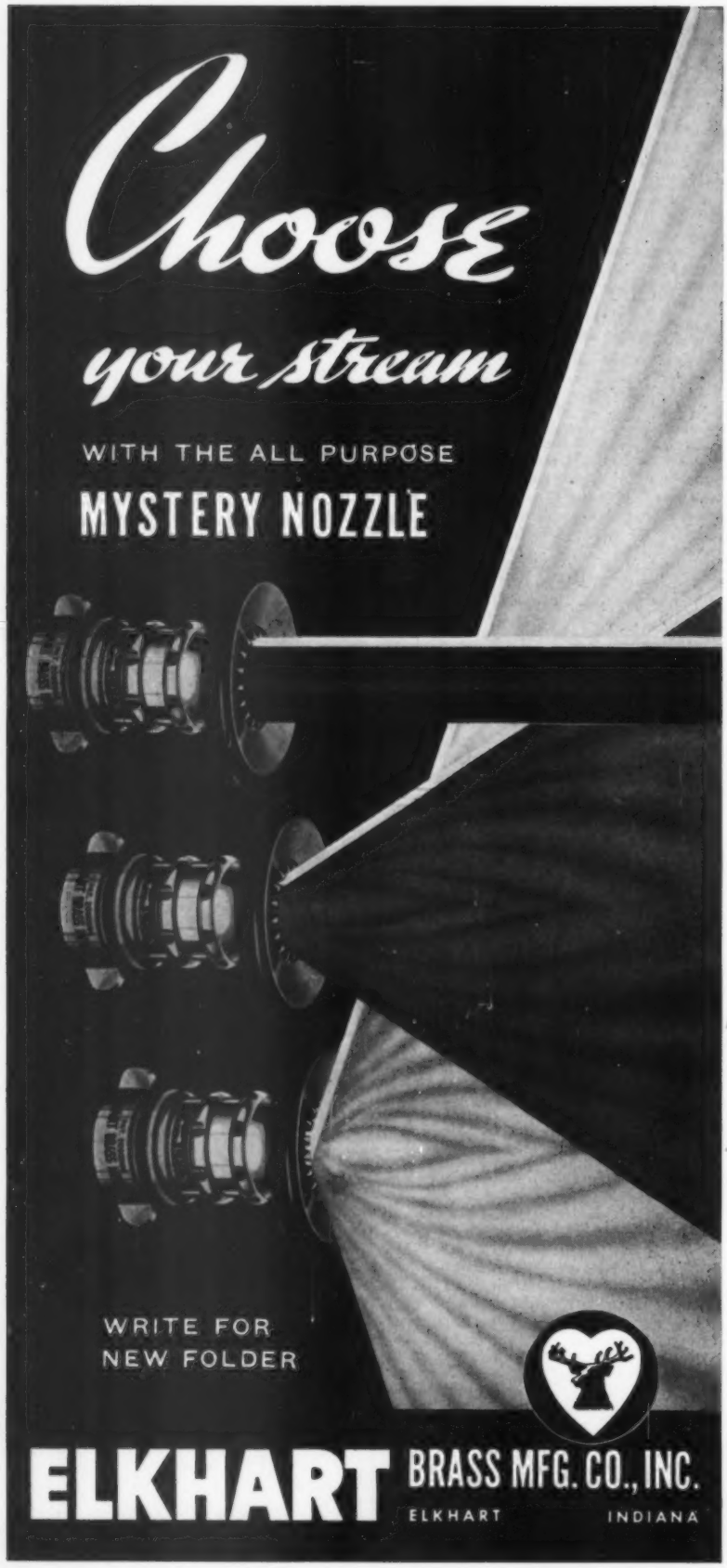

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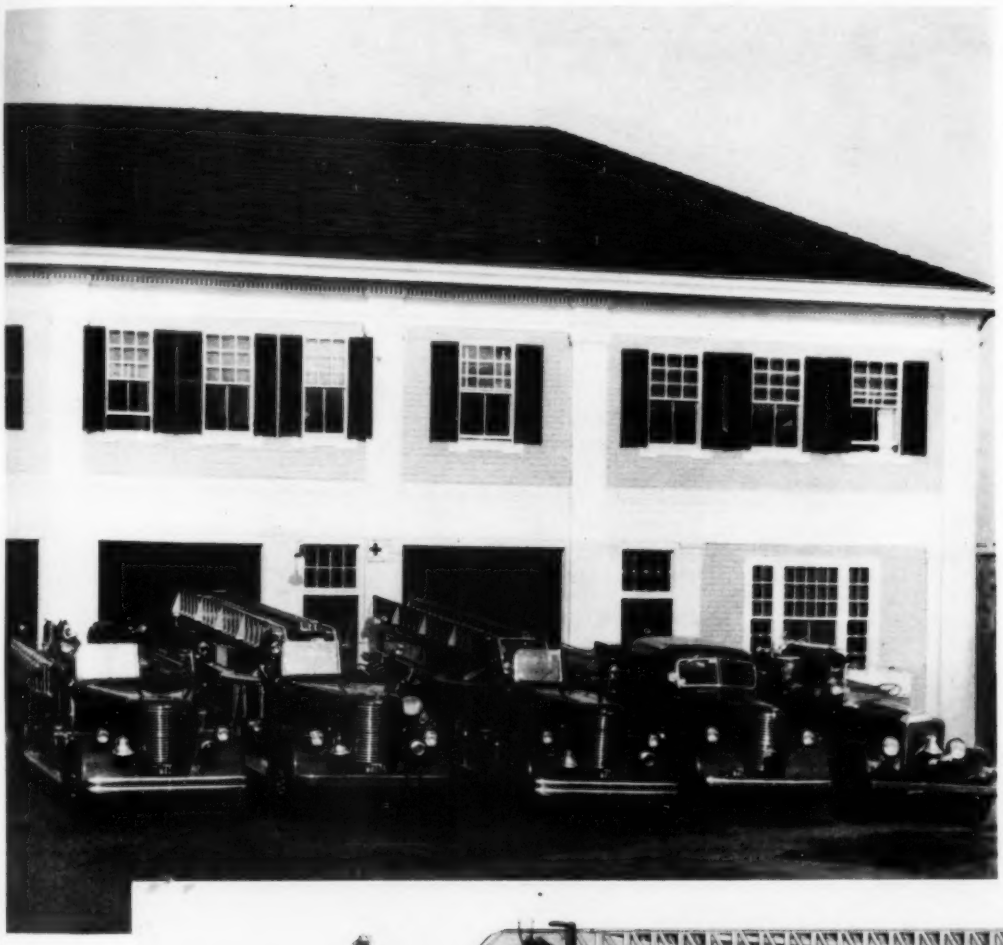

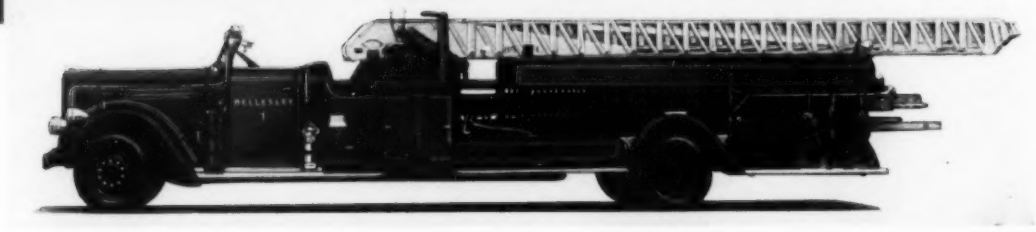

GOOD DESIGN AND PROPER CONSTRUCTION MEAN DEPENDABLE PERFORMANCE

To function properly under severe fire fighting conditions your apparatus must be of sound design, proper construction and built of the right materials.

Pirsch aerials and pumpers have been known for years for their fine design, rugged construction and outstanding performance.

Pirsch Intermediate Aerial above is one of five pieces of Pirsch apparatus delivered to City of Wellesley, Mass.

PETER PIRSCH & SONS CO. KENOSHA, WIS.

"BUILDERS OF AMERICA'S FIRST ALL-POWERED AERIAL LADDER TRUCK AND AMERICA'S FIRST 100' AERIAL LADDER"

Two Nebraska Fire Districts Choose-

FWD

Two neighboring rural fire districts—Valparaiso, and Ashland, Nebraska, choose FWD fire engines because of the added protection and safety they offer. They are virtually identical equipment — both of them being FWD 130 hp Model FR-50T's equipped with 500 gal. booster tanks, a single hose reel carrying 150' of 1" hose, and with a hose body capacity of 1000' of 2½" hose. Pumps are FWD 2-stage centrifugal, series-parallel, 500 gal. capacity, 150 lbs. pressure. 2 sections 10' x 2½" and 2 sections 10' x 4" hard suction hose.

Choose the Added Protection of Extra-Traction to Protect Your Community

Traffic experts know that FWD four-wheel-drive traction means less time on the run *and far less danger for crews, equipment and other vehicles.* Equally important—FWD engineering also delivers extra action and dependability at the blaze. Write for full facts on this exclusive combination of advantages.

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Start faster. Positive control permits greater speed. Avoid collisions because 4-wheel-drive assures superior steering.

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Drive hub deep through sand or mud. Pull up steep, slippery grades without losing speed. Save precious minutes.

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